American Aviation

The Independent Voice of American Aeronautics **SEPTEMBER 15, 1943**

Airpower Dominates

Fortnightly Review

FOR many years we have been hearing from critics of aviation that airpower is not a *decisive* weapon. And yet, has there ever been a country in the world that capitulated as Italy has done without land fighting? What brought about the unconditional surrender of Italy? Any frank and fair answer must be the airplane.

It was airpower that made the swift Tunisian campaign possible. It was airpower that paved the way to Sicily. And it was airpower that crippled Italy's transportation system. An entire country cowed and forced to surrender by the airplane! Of course land armies could have done the job without airpower but it would have been a thankless, costly job—the tedious road westward from Egypt with its tremendous supply problems, the bitter fighting necessary to chase the Axis out of Africa, and the costly venture into Sicily. Without airplanes the task would have been long and wasteful.

It is airpower that is today knocking out German industry, utilities, and transportation. It is airpower that is stopping the supply strength of a nation that still wants to fight but which will in time be forced to give up.

It has not *all* been an air job. Sea power, bitter land warfare—all of this has been a part of the general advance. But the *predominant* force above all has been the airplane, the only weapon that can reach far behind the enemy lines to destroy the *sources* of warfare.

Will the same weapon bring Germany to her knees? No one knows, but the stopping and destruction of Germany's supply lines and factories, and the de-

(Turn to page 9)

American Aviation Photo

Confer on Manpower

The advice of Elder Statesman Bernard Baruch was sought by the industry last fortnight as steps were taken to solve the manpower problem. This exclusive photo shows the meeting in Baruch's "office" on a bench in Lafayette Park. Left to right are Harry Woodhead, president of Consolidated Vultee Aircraft Corp.; Frank F. Russell, general manager of the National Aircraft War Production Council, and Baruch.

Late Bulletins

CAB To Study Routes

CAB announced officially Sept. 9 that it will consider at an early date applications for routes between the U. S. and points in Mexico, Central and South America and the Caribbean area. The Board indicated that it will study the needs of the area as a whole rather than consider specific applications. Applications should be amended with this in view, CAB said.

Planes Given Priority

Charles E. Wilson, WPB executive vice chairman, has told the manpower subcommittee of the Senate Military Affairs Committee that aircraft production will be given number one priority over all West Coast industries.

Trend of The News

Re-Entrance: Inside dope on the Greyhound Corporation applications for helicopter routes to supplement its widespread bus system is rumored to be a planned re-entrance of Lehman Brothers and John Hertz into the air transport field. In the past few years Lehman Brothers has not had more than minor financial interests in airlines. Late last year, it is rumored, Lehman Brothers endeavored to buy control of one of the larger airlines but failed in the attempt. Having heavy interests in Greyhound, the financial house is seeking this new way of taking a major plunge. Privately, however, some of the important bus people don't believe the bus companies have a chance to get certificates.

Renegotiation: There is definite indication that in considering renegotiation matters, the House Ways and Means Committee will draft a provision making a more liberal allowance for postwar conversion by aircraft manufacturers.

Manpower: War Mobilization Director James Byrnes came out with his manpower program last fortnight for West Coast aircraft plants. The industry, however, is far from satisfied with it. Because of the large number of government agencies involved, observers feel it may prove unworkable.

PAA Series: Pan American Airways has gone to great lengths to give out the impression that the Matthew Josephson series on PAA in *The Saturday Evening Post* is displeasing to the company's upper strata. Actually, the series has met with great favor in the organization, especially at the top and the company worked overtime to give Josephson all the material he needed. The author waded through masses of material delivered to him by PAA. What has burned up a lot of industry people is the number of phone calls made by PAA's press outfit asking for letters to be written to the company praising the series and the dodge the press outfit used to get the letters, such as "The boss is upset over the articles, it would help our department out if you'd say they were good." Josephson is reported to have received $20,000 by the *Post* for the series.

(Turn to page 6)

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PRODUCTION ON SCHEDULE

The splendid performance of America's aircraft in World War II, is a tribute to the men who make them . . . as well as those who fly them.

For it takes management, planning, engineering, procurement, tooling, training, skilled workmanship, and coordinated effort of the highest order, to produce planes in adequate quantities . . . on schedule.

At McDonnell, we *have* met production requirements . . . on planes, parts, and plastics *on schedule.*

Behind this successful production performance is a well-rounded organization of seasoned aircraft executives, engineers, research workers, tooling experts and production specialists . . . who have passed along the results of many years' experience to thousands of earnest hard-working shop personnel.

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We shall welcome further opportunities to serve our country's war effort.

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Manufacturers of PLANES · PARTS · PLASTICS • SAINT LOUIS-MEMPHIS •

Back from a bombing mission—an engine missing—a rudder all but shot away. Under tent, on sandy deserts, our skilled Air Corps mechanics are "keeping 'em flying"—within earshot of enemy guns.

Get 'er *Flying* in a hurry

When a mission must be carried out, there is no time to baby an airplane! The machine shop may be under a tree with the sky for a hangar roof, but the orders are: "Get 'er flying—in a hurry!"

It takes a tough ship to stand the daily pounding these missions entail. It takes a tough engine to keep that ship flying with minimum time out for repairs and overhauls. And this is the job that Pratt & Whitneys are performing—a job that is writing their fame in smoke and fire over Axis-ruled lands.

But the toughness of these engines comes, not from rugged construction—not from "beefed up" parts, but from the close tolerances to which every part is held—a precision that makes possible great strength coupled with lightness.

The lightweight precision gears that have been developed for this engine—gears that are today being made in huge quantities at Foote Bros.—give promise to American manufacturers of new efficiency and new economy in the transmission of power when the war is won.

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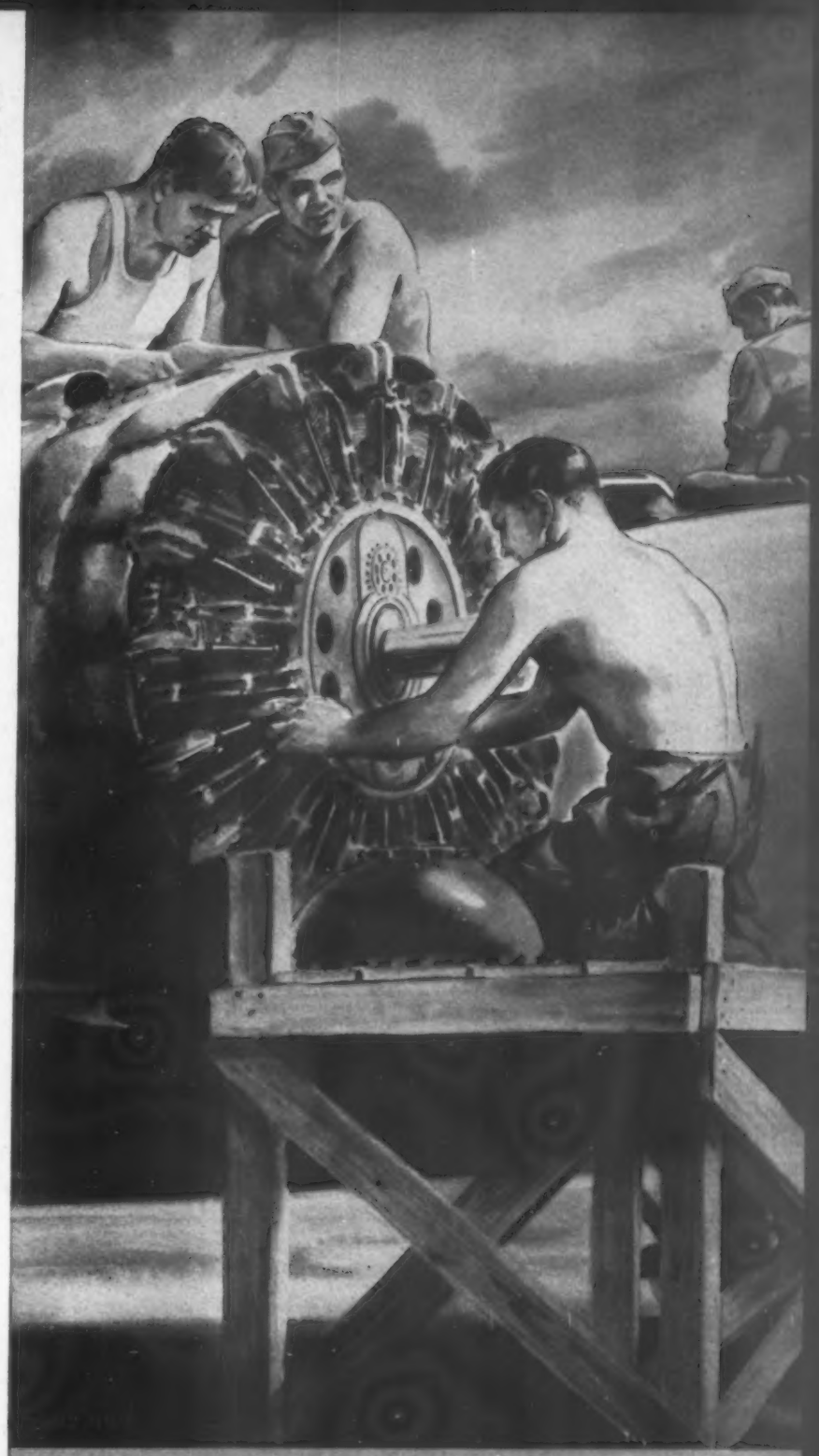

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Better Power Transmission Through Better Gears

American Aviation

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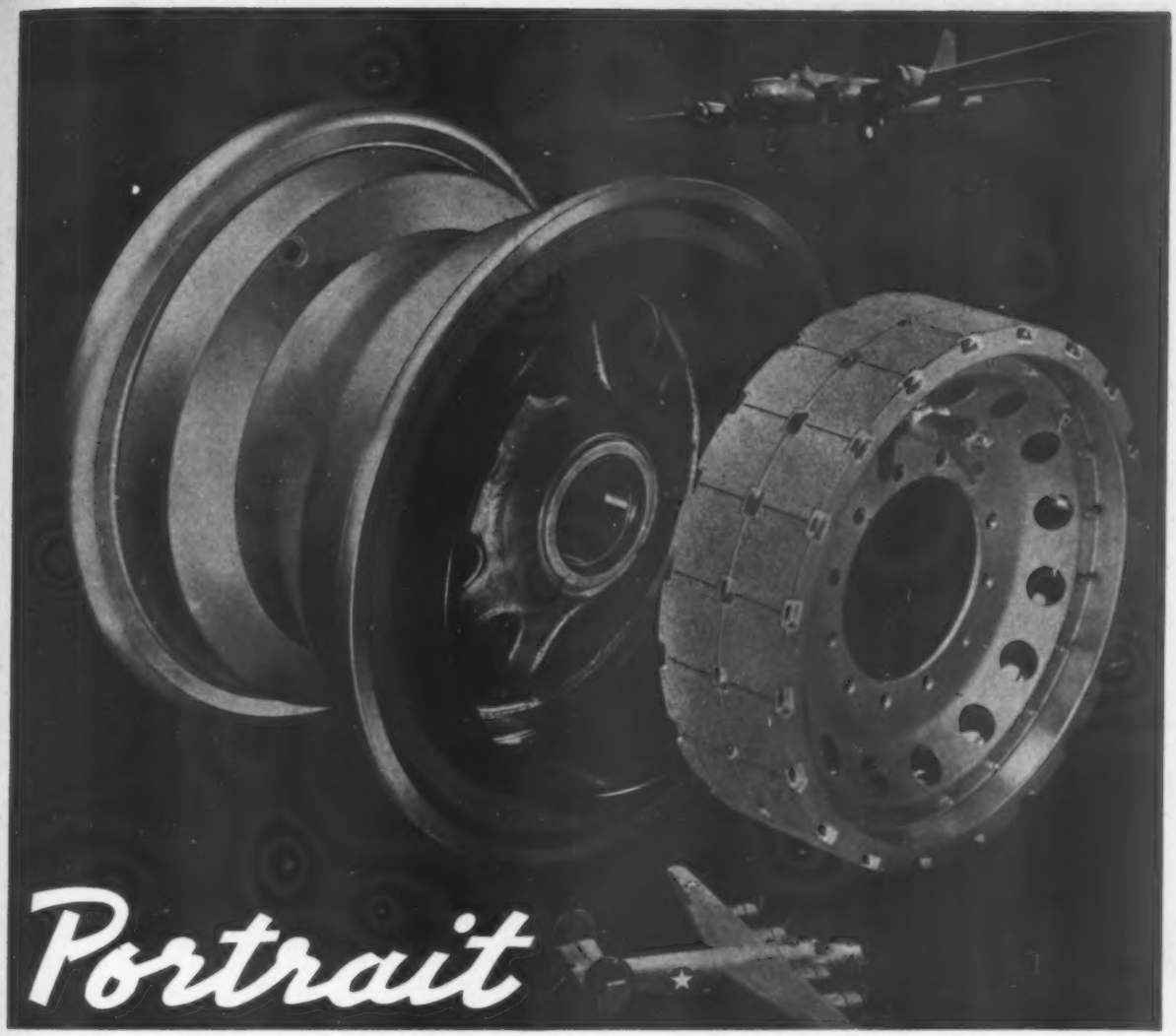

OF A "CREW MATE" THAT STARTS A FLIGHT . . . AND ENDS IT

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Trends

(Continued from page 1)

Seadrome Support: Although the seadrome plans advanced some months ago by Pennsylvania-Central Airlines were received lightly in many industry quarters, the seadrome idea is being given careful consideration in certain government circles. What most people don't know is that there would be one or two ocean seadromes today if it had not been for the war. The CAA has been deeply interested in the idea for several reasons, weather reporting being one of the most important. From a commercial transport angle, a seadrome landing field between San Francisco and Honolulu would permit a great increase in payloads, while from a diplomatic angle, seadromes would do away with the necessity of securing landing rights in certain parts of the world. In any event, the seadrome idea is bound to get attention in postwar plans and one of its chief backers will be the CAA.

Materials: One of the bright spots in the manufacturing picture is the materials situation, which continues to show sustained improvement and which is expected to get even better toward the end of the year. The troublesome spots have been passed. Manpower remains as the big problem.

Italy's Fall: The fall of Italy, officials believe, will give added impetus to postwar planning on the part of plane makers.

Still Strong: Despite statements by various British groups urging widespread competition in postwar aviation, don't sell British Overseas Airways Corp. short. It still has strong supporters. For instance, Viscount Rothermere, political and press power in England, said recently: "I imagine that this Corporation is to remain the chosen instrument of the Government. I imagine it is very unlikely that the future can hold anything else after the war. I think it is very unlikely that the financial side and the organizing side and the research side are possible for any different organization than a Government organization . . . I do not think it is possible to have private enterprise running civil aviation after the War. I do not think it can be done on a big enough scale by private enterprise . . ."

Still Growing: The latest Post Office Dept. figures on air mail show that the trend is still upward. On a weight basis, air mail is 75% ahead of last year. Pound-miles are even higher, but because of some circuitous routings this figure does not present a true picture.

Praise: The increasing recognition of airpower continues. Gen. George C. Marshall, U. S. Army Chief of Staff, in his recent report to the Secretary of War, said unqualifiedly that "the outstanding feature to date of America's war effort has been the manner in which our air forces have carried the war, in its most devastating form, to the enemy . . . The Army Air Forces are now attacking the enemy on 10 different fronts throughout the world."

Boypower: In an attempt to solve its manpower problems, the manufacturing industry will attempt to keep—and will succeed—a large number of the young boys working after school opens. Many have been employed during summer vacation. Arrangements are being worked out so they can go to school and work too.

Feeders: Within the next fortnight, the Civil Aeronautics Board's investigation into the feeder-pickup situation will get underway. As pointed out before in these pages, this proceeding will be of extreme importance not only to the established airlines, but particularly to the "little fellow" who does not have global aspirations. Out of it can come an examiner's philosophy on the postwar domestic air picture. His conclusions must be based on the facts as presented—the better the presentations the better the report. Parties in all probability will be given an opportunity to "shoot at" his report after it is issued. More plans for the postwar feeder map will be presented than have been gathered in one room before.

Buy Tail Wheels...Tail Wheel Tires & Tubes

THE GENERAL *WAY**

The Old Way . . . tires, tubes, wheels bought as separate units require extra warehousing space, extra inventory and stock records.

The Old Way . . . means lost time in obtaining needed tail wheel units from separate storage spaces.

The Old Way . . . necessitated assembly of tail wheel units —waste motion!

General's tire-tube-wheel combination eliminates waste! Can be stored in one place . . . *is ready for installation!*

* IN ONE PACKAGE! When you buy GENERAL's tire-tube-wheel *combination* you eliminate need for extra storage space . . . avoid unnecessary inventory . . . save production and maintenance time, cut costs and at the same time get the *quality* design that counts!

The General Tire & Rubber Company's *complete* ahead-of-the-field line of military and commercial type tail wheels is backed by General's long, practical experience in the manufacture of aircraft wheels, brakes, tires and allied aviation products . . .

General tail wheels are *rugged*, built to take as much abuse as main landing wheels . . . yet they're *light—for increased payload!*

Designed to meet Army, Navy and C. A. A. specifications . . . General tail wheels and tires alike have *proved* their superiority in action on every type of aircraft and in tests run at General's own completely equipped laboratories as well as in extensive tests by leading users.

A case in point was the way the General Twin-Bead tail wheel tire stood up . . . where single bead tires failed . . . in sideload tests run by a large, eastern aircraft company. General's Twin-Bead feature provides *extra-grip* on the wheel rim!

GENERAL Military and Commercial type tail wheels are fabricated from aluminum or magnesium alloy castings. Precision machined . . . fitted with tapered roller bearings. Both tapered and straight axles. Designed and built to A. A. F. Spec. No. 25272. (Easily removable dust-proof cover equipment.)

So it's good news that today General has production facilities available for immediate delivery on General tires, tubes and wheels. *For further information write or wire—Aviation Division*

TWIN BEADS

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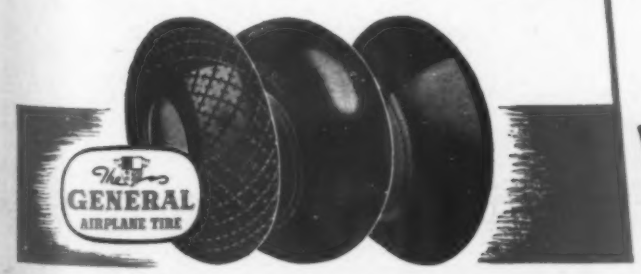

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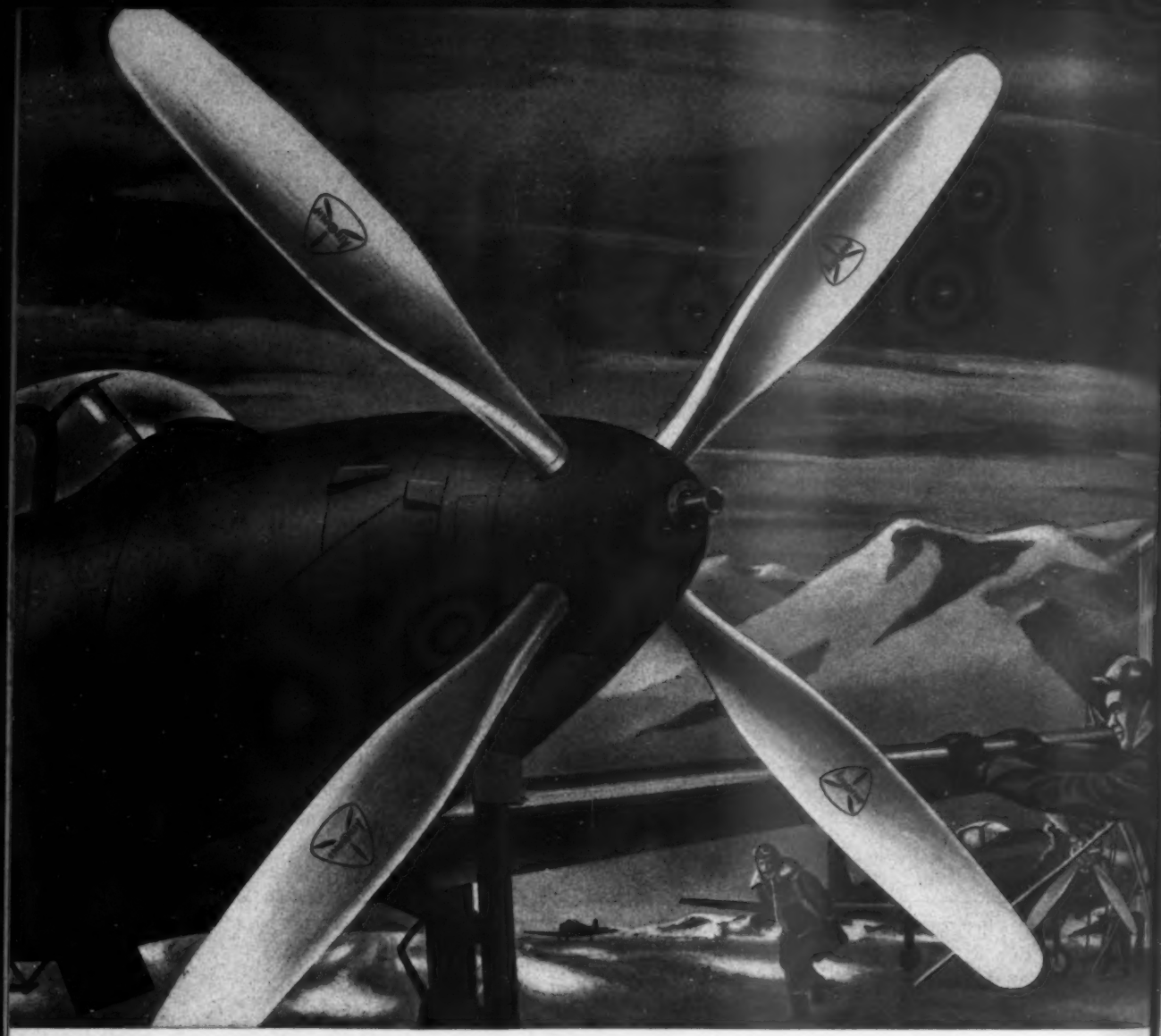
With the General Deflect-O-Gauge, each tire can be inflated to exactly the *correct pressure* required for the load. No graphs, charts, use of scales or air pressure gauges necessary . . . simply use the General Deflect-O-Gauge and air hose! Write now for free instruction folder. Address: Aviation Division, The General Tire & Rubber Co., Akron, Ohio.



It's easier to *KEEP 'EM FLYING* with Aeroprops

LIGHT—Weight is at a minimum in the Aeroprop, with its ribbed steel blades.

STRONG—Propellers on combat planes take a terrific beating. The Aeroprop is engineered to "Keep 'Em Flying."

SIMPLIFIED—The Aeroprop is built as a self-contained unit. Automatic pitch control and power mechanism for pitch changes are integral parts of the compact propeller assembly.

BUY WAR BONDS—
KEEP AMERICA FREE

GROUND crews praise the simplicity of Aeroproducts propellers. It's their job to service ships in "nothing flat" and get them back into action. The Aeroprop simplifies that job.

True, the Aeroprop has every advanced feature of propeller operation, including many exclusive principles of its own, but these are combined with such simplicity that servicing-time is cut to a minimum. The simple working mechanism is contained in the compact propeller assembly itself—easily accessible for quick inspection, replacement or repair. If necessary, the entire propeller can be "pulled" without dismantling other sections of the engine or of the plane. In brief, the Aeroprop is designed for swift servicing, for economy of time that means savings in peace-time as well as in war.

Simplicity is just *one* Aeroprop advantage. Strength, lightness, rapidity and precision of pitch action, compact unit-construction—these are additional features that have qualified the Aeroprop for service on thousands of America's war-planes.

AEROPROP

AEROPRODUCTS DIVISION **GENERAL MOTORS** CORPORATION

GM ARMS FOR VICTORY

Editorial

(Continued from page 1)

struction of her cities, will have a very great bearing on the ultimate fall of that country. No nation can stand up indefinitely against consistent airpower. No matter how Germany falls, airpower will have paved the way. Airpower will have hastened the day.

And while we are on the subject, the naval sea dogs who have claimed with stupid stubbornness that only a sea power can knock out submarines, should read the report of Sept. 7 issued by the U. S. Navy on the destruction of U-boats. No less than 21½ submarines out of 24 were sunk by aircraft! Twenty-one subs were the sole victims of airplanes, while one sub was sunk by the combined efforts of an airplane and a destroyer. The Martin Mariners, the Consolidated Liberators and Catalinas, the Vega Venturas, and the Grumman Avengers and Wildcats, performed an excellent service in establishing this high record. Is any more proof needed that it takes airplanes to do the job?

How true Billy Mitchell was, and how many the doubters, and how costly these doubters have been to our country. Would that Mitchell could have been present at the surrender of the Italian forces! History has been made.

Unheralded War Job

THE airlines of the United States have performed one of the best jobs of the war in their contracts with the AAF Air Transport Command. They have cooperated in training programs of all sorts. They have stripped their own executive manpower to provide the Army and Navy with capable leadership. Yet the airlines have received virtually no recognition for their part in the war.

A manufacturing company with a good record is awarded an Army-Navy "E" and the award is accompanied with a suitable celebration. A shipping company that has done a good job is awarded a Maritime "M." But the airlines are left out in the cold. Where does the fault lie? We think the Air Transport Command would do much better if it kept itself out of national magazines and gave recognition where recognition is due. We think the Army-Navy Award Committee should break down and establish a suitable award. The treatment of the airlines in the present war would be a ridiculous mockery if it were not so serious.

A Manpower Solution

NOT that we've been asked, but it seems to us that one way to add manpower to war plants is to cut in half the number of guards at plants, airports and other areas. Guards are so numerous they fall all over each other. The majority are husky chaps who could be doing a lot more than writing down the names of visitors and making a cursory check of passes. We have an idea that the surplus of guards could just about fill the manpower gaps in war plants.

Name Needed

A NEW name descriptive of feeder airlines is needed for the future. O. M. Mosier, vice president of American Airlines, pointed out to us the other day that the term "feeder" is not going to be appropriate for selling the public when the secondary lines are established after the war. The term has been used loosely in aviation circles for lack of any other descriptive word, and a number of applications from companies using the word "feeder" in their corporate titles are now on file. But the word "feeder" may not induce the traveling public to use these lines for there is an inference that they may not be using the best equipment and are not strong concerns. If anyone wants to invent a suitable descriptive term, the field is wide open. Suggestions are welcome.

Hallelujah! A Cash Customer

ONE of the vital air links in the world today is the A. B. Aerotransport airline between England and Stockholm. Flying usually at high altitude and at night when weather conditions are not perfect, the Swedish airline has performed an excellent operation. Recently it had its first plane loss on the route. For five months officials of the company have been in the United States endeavoring to arrange for more airplanes but so far have not met with any great success. Oddly enough in these days of lend-lease when we give our Allies everything they want, the Swedes want to put cash on the line. With transport plane production at a high mark, it would seem to be a wise move to sell the Swedes a few airplanes with which to strengthen this vital air connection. Because Sweden is a neutral country, the AAF Air Transport Command cannot provide a service. Why not let the Swedes do it for the remainder of the war?

Trusted Citizens Again

THE good old days of back seat piloting are back again. Now that the silly curtain-drawing rule has been abrogated except at a very few vital points, the pilots should have a much easier job of landing and taking off, for they have 21 good hardy citizens sitting back of them doing all the banking and holding their collective breaths to see if they can feel those wheels touching the runways. Of course it's quite ridiculous to think that the passengers can ever tell just when the wheels touch the ground, since all transport plane landings are as smooth as the most delicate and exquisite silk, but anyway it's good clean sport to participate in this flying business and my, how strange some of these cities look from the air. Traveling by air is indeed pleasant again now that we are all trusted as loyal citizens with a right and privilege of seeing what our own country looks like.

WAYNE W. PARRISH.

Perfect Circle has once again written
a new page in piston ring history.

People

Dicks

Barnaby

Capt. Ralph S. Barnaby, U. S. Navy, has been named chief engineer of the Naval Aircraft Factory at Philadelphia Navy Yard.

Switlik Parachute Co. reports that **Lottie Switlik,** daughter of the company founder, is chief inspector in charge of materials at the age of 26. "She has been running around the factory since her pigtail days," it is reported.

Edith Wideman has joined the public relations department of Southern Airways and will represent the company in Alabama. She is secretary of the Birmingham Aero Club.

Mrs. Cozette Lane, formerly a high school English teacher in Texas, writes and edits four manuals that go with each Liberator leaving Consolidated Vultee's Fort Worth plant.

Thomas A. Dickinson, author of "Aircraft Construction Handbook," is a Naval inspector in Convair's San Diego Division.

Cadet Leon B. Lent, Jr., recently completed five hours of solo flying at Albany, Ga. He is the son of **Lieut. Col. Leon B. Lent,** who was the oldest man in World War I drawing flier's pay, and now, at 67, is chief engineer of the U. S. Inventor's Council.

The Jacksonville, Fla., Naval Air Station announces that **Comdr. Robert R. Johnson,** veteran pilot who won the DFC for action in the Battle of Midway, has been appointed executive officer.

David Shawe, managing editor of AMERICAN AVIATION DIRECTORY, has been promoted from ensign to lieutenant (j.g.) in the U. S. Coast Guard.

Lieut. Comm. A. Glen Acheson has been appointed commanding officer of Colgate University's Naval Flight Preparatory School.

Wideman

Nazar

Although 84 years old, **Thomas A. Dicks** works as an engineering consultant in the drafting rooms of Hamilton Standard Propellers Division, United Aircraft Corp. Dicks entered the propeller field in Pittsburgh in 1917 and has been associated with it ever since.

Cy Caldwell has become editor of "Air Pilot and Technician", formerly "The Sportsman Pilot." He replaces **William D. Strohmeier,** now a flight school instructor.

R. O. Smith, who is said to have installed the first radio beacon receivers ever used in commercial aircraft, has been appointed assistant superintendent of maintenance in charge of overhaul for Pennsylvania-Central Airlines at the company's general headquarters in Washington, D. C.

Stewardess Loretta Nazar of United Air Lines is said by the company to be the world's first official War Bond saleswoman of the airways. She was officially deputized to sell bonds in flight after completing a Treasury Department course.

Lieut. Kenneth A. Bryant of Gainesville, Fla., is mentioned in news dispatches from Sicily as "doing a remarkable job of artillery observation in a clumsy little plane flying only 1,000 feet high."

Maj. Gen. William C. Kepner, veteran Army airman, has assumed command of the U. S. 8th Fighter Command in England.

Col. Ralph E. Spake, commanding general of the 6th Ferrying Group, Air Transport Command, Long Beach, Cal., will soon take over command of the newly organized Western Sector of the Ferrying Division with headquarters in Salt Lake City, Utah.

Maj. Gen. George E. Stratemeyer, former Chief of Air Staff, Army Air Forces, now in India, has been awarded the Distinguished Service Medal.

Books

HOW OUR ARMY GREW WINGS, by Charles deForest Chandler, late Colonel, U. S. Army, and Frank P. Lahm, Brigadier General, U. S. Army, Retired; The Ronald Press Co., New York; 280 pages; $3.75.

Here is a precise recording of the development of the Air Corps, made by two men well qualified to do the job. Col. Chandler was the first Army officer detailed to aeronautic duty; Gen. Lahm was the Army's first airplane pilot, and also the Army's first airship pilot. The book contains facts and figures as to persons, dates, machines, altitudes, speeds, horsepower, performance records, and military orders taken from personal records and recollections of the authors, and of many others who had a part in the events described. One valuable source of information was Gen. Henry H. Arnold, commanding general of the Army Air Forces, who, as Lieut. "Hap" Arnold, taught Chandler to fly an airplane. The reader may be surprised at some of the facts in this volume. For example, the Army was using a bomb sight as early as 1910.

THE WAR PLANE AND HOW IT WORKS. By Burr W. Leyson. Illustrated. E. P. Dutton & Co., 300 4th Ave., New York. 224 pp. $2.50.

The author has added to his other books on airplanes this one on the details of how a war plane operates. The subject matter ranges from chapters on machine guns, synchronization, shotguns and cannon, power turrets, to plane performance, engines, superchargers and gyro instruments. The purpose of the book is to explain highly technical matters in easily understandable words for the layman and in this the author has succeeded. Some of the chapters are reprints of articles from various aviation magazines. The book is well illustrated with photographs, diagrams and charts.

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THERE'S SOMETHING IN THE AIR, by H. E. Bates, Alfred A. Knopf publishers, New York. $2; 172 pages.

Mr. Bates, writing as Flying Officer X, has gathered together these 21 stories of the men who fly the Spitfires and Hurricanes on nightly bombing raids over Germany in order to give his readers an insight into the way they think and feel on the ground as well as in the air. Each story is a complete picture in itself, but you look forward to each succeeding one because the thoughts are so revealing and intense. You find out why the fliers chose to fly—why they came to England from Canada, Australia, the United States, or why they managed to escape from concentration camps to make their way to England. You see how they live from day to day, how they think and feel. Also you see that the great spirit of teamwork is just as present in an English flight squadron as an American one or any other country's.

Of special interest is the glossary of R.A.F. slang at the close of the book.

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BLUE-PRINT READING. D. E. Hobart; Revised Edition, Harper & Bros., New York; 1943; $1.00, 65 pp. text, 32 pp. problems.

This paper-bound text is the work of the Associate Professor of Mechanism and Engineering Drawing at the University of Michigan. The book is an outgrowth of the author's experience in teaching the reading of machine drawings at the General Motors Institute.

The technique of teaching introduced in the text does not require the making of a large number of drawings but by presenting actual drawings as problems (of which there are many in the book) the student must answer questions regarding each of these drawings and thus absorbs the principles of drawing.

The presentation appears to be technically sound and clear in all respects.

E. J. F.

Obituary

G. Willis Tyson

G. Willis Tyson, general manager of Riddle-McKay Aero College, Clewiston, Fla. died Aug. 20 of injuries received Aug. 18 in an airplane accident at Dale Mabry Field, Tallahassee, Fla. Burial was at Los Angeles. Tyson was flying to Ponca City, Okla. and had landed in Tallahassee when his plane collided with an Army ship. He was scheduled to attend a British Flying Training School conference and later visit other B.F.T. schools in the country. B.F.T. No. 5 school is located at Riddle-McKay Aero College. Tyson, born in Manchester, Eng. came to the U. S. in 1909. In 1936 he was a pilot on the Los Angeles-Caliente Air Lines and in 1937 joined the Department of Commerce as an aeronautical inspector. From 1938 to 1940, Tyson was CAA engineering inspector in the First Region, New York.

Petroleum Research and War in the Air:

One of a series of original Esso Laboratories research developments that help give U. S. planes an edge in the air.

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This Issue

Byrnes Acts in Aircraft Manpower Crisis

Purpose of West Coast Plan May Be Defeated By Cumbersome Methods, Observers Believe

By BARBARA B. C. MCNAMEE

THE Office of War Mobilization on Sept. 4 announced its long-awaited program, the primary purpose of which is to relate, for the first time, the number of airplanes produced by West Coast manufacturers to the available supply of manpower.

However, as this issue went to press, competent industry observers were inclined to believe that the cumbersome methods and divisions of authority set up by WMC may defeat the purpose of the plan.

In recent months, the manpower shortage has been more than a threat to production on the West Coast—it has been an actual retarding factor in failure to meet production schedules.

Basic trouble spots have been: (1) a high rate of turnover—about 18,000 a month now, (2) insufficient labor to meet accelerated schedule demands, (3) the drafting of key personnel from aircraft plants, and (4) confusion of authority among the various regional and national offices of the many government agencies involved.

To meet these problems, the program announced Sept. 4 by War Mobilization Director James Byrnes provides (1) a plan similar to the "Buffalo plan" of controlled referral hiring, (2) production and manpower priority systems, (3) increased utilization and recruitment of manpower, and (4) morale-building programs in factories.

Buffalo Plan's Provisions

The Buffalo plan provides that all employers hire workers through the United States Employment Service and that workers accept only jobs to which they have been referred. Workers are referred to jobs in the order in which the establishments are listed by relative production and manpower urgency.

On Sept. 7, both the War Manpower Commission and the War Production Board dispatched picked men to the West Coast to put the WMC program into operation.

In addition to having a plan in which it is felt too many government agencies are involved, the industry failed to win its fight for inclusion of a definite, clean-cut draft deferment policy for workers. On Sept. 10, aircraft workers were granted another 60-day moratorium from Oct. 1, but this is far from being a permanent policy, it was pointed out.

The final plan was assembled by Byrnes after reports and recommendations had been filed with him by all government and industry groups concerned in the tie-up in aircraft production. Byrnes appointed two of his special advisers, Bernard M. Baruch and John Hancock, to study the situation, sent John Hertz, Detroit automotive man, to the West Coast as his personal investigator. Hertz, Hancock and Baruch prepared a report, details of which are still unknown.

Assistant Secretary of War Patterson, Lt. Gen. William S. Knudsen, Production Director of the War Department, and WPB Executive Vice-Chairman Wilson met with aircraft executives on the West Coast, and promised specific actions which were incorporated in the WPB report.

Heads West Coast AWPC

T. Claude Ryan, founder and president of Ryan Aeronautical Co., is the newly-elected president of the West Coast Aircraft War Production Council, Inc. He succeeds Lamotte T. Cohu, chairman of the board of Northrop Aircraft, Inc.

War Manpower Commission's regional offices held hearings and collaborated with the national office on a report, which is the model for the one authorized by Byrnes. Representatives of the Army Air Forces, War Labor Board, Office of Defense Transportation, Federal Housing Authority and WPB's Labor Vice-Chairman Clinton Golden were among those who studied and reported on the critical manpower situation and possible remedies. The industry, through the Aircraft War Production Council through meetings with Patterson, Wilson, Echols, Knudsen and Baruch presented its interpretation of the fundamental troubles and the most advisable solutions.

"It is obvious," Byrnes stated, "that drastic measures are required to increase the available labor supply and to insure its most efficient and economical use. The program adopted provides for the setting up of operating machinery for the flexible and continuing adjustment of manpower and production in accordance with the changing needs of our strategy."

Need WPB, WMC Harmony

He pointed out that the program called for close cooperation between WPB, WMC and the various procurement agencies in dealing with the interlocking problems of manpower and production. Byrnes pointed to the Buffalo plan as a success and indicated that if it were to operate successfully on the West Coast it would then be applied to other areas. *American Aviation* learned, however, that Buffalo management and labor representatives, unsatisfied with the "successful operation" of the plan, were to meet with WMC officials September 14 to present complaints and recommendations.

After all reports had been screened by Byrnes and his assistants, recommendations were sent to the President, whose "war powers" were necessary to achieve some actions such as permanent deferment. The invasion of Italy and conferences on war strategy with Prime Minister Churchill have so far prevented President Roosevelt from studying or acting on these drastic proposals, though insiders say this may come in the future. Pressure of a continued failure to achieve increased aircraft production during August apparently convinced Byrnes that some action must be taken without waiting for Presidential approval.

"The critical production situation on the West Coast requires that effective action be taken immediately to restore and maintain the essential balance between production demand and manpower supply. It involves an accurate determination of the total manpower available and of the volume of production, including transportation and other essential services, which can be maintained when production schedules and manpower resources have been brought into

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'Revitalized' Aeronautical Chamber Urged by Group

Members Vote on Plan; $500,000 Budget Proposed

REVITALIZATION of the Aeronautical Chamber of Commerce of America, to make it the strong voice of the industry especially in matters pertaining to postwar aviation, has been recommended by a special committee of the Chamber's board of governors, and has been approved by the governors.

A budget of half a million dollars a year and the employment of a capable executive to head the Chamber were urged by the group.

The recommendations have been submitted to all members of the Chamber for a vote. The committee was formed to draw up a program following suggestions made two months ago by West Coast manufacturers.

Committee members were: Rudolph H. Deetjen, assistant to the president of Aviation Corp., chairman; Henry W. Cohu, Washington representative of Northrop Aircraft Inc.; Charles Marcus, vice president-engineering, Bendix Aviation Corp.; J. Carlton Ward, president, Fairchild Engine and Airplane Corp.; J. Story Smith, vice president and secretary, Jacobs Aircraft Engine Co., and ex-officio, James P. Murray, vice president and eastern representative of Boeing Aircraft Co., and president of the Chamber.

"It is our opinion," said the committee, "that there are ample reasons for an aeronautical trade association to represent the aircraft manufacturing industry. . . . As the industry comprises so many components, it seems to us that a trade organization is the only logical arrangement whereby a united front, which we consider so essential, can be presented to maintain the important relationship that should exist between the public and the industry, and between the legislative and administrative departments of the government and the industry.

"Another major reason for a trade association is that our industry is most vulnerable to the postwar readjustment shock and that this problem alone is so acute that, if not solved by intelligent representation to the various government bodies, irrespective of all other considerations our industry will emerge too financially weak to be able to carry out its place in the country's economic and national affairs . . . To summarize, we feel that as leaders in this industry our responsibilities require that we have a trade association.

"It is our view that the type of organization for this industry need not be as complex and as expensive as many other trade associations. We feel that it should be thoroughly democratic in setup so that the voice of the smallest member may be heard at all times as easily as anyone else's and that the interest of all groups may be adequately represented.

"We feel that a board of governors of sufficient size (perhaps 30) should be required so that all segments of the industry would at all times have proper representation in the policies and administration of the association. In order to have continuity of policy it is suggested that one-third of the board members be elected each year. For ease of administration we feel that an executive committee of workable proportion should be the board of governors' representatives to which the board of governors could delegate whatever authority it desired in keeping with sound business procedure.

"It is our suggestion that the chief executive officer be designated as president and that he have some knowledge of aviation as well as an understanding of our government's legislative and administrative procedures. As the association will be just as good as its chief executive officer—no more and no less, we feel that it should be prepared to consider a man of proven competence, and to pay him an adequate salary to secure his services.

"To insure continuity of administration and planning and to attract the proper type of chief executive by ensuring reasonable stability of income and position, it is recommended that an employment contract be offered for a minimum of a three-year period."

Concerning dues, the committee recommended that no single member should pay more than $30,000 yearly.

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Airport Manager

Hervey F. Law has assumed charge of the Washington National Airport in Washington, D. C. He was previously regional supervisor of airports for the Civil Aeronautics Administration, with headquarters in New York City.

Air Transport, Shipping Lines Urged to Make Peacetime Plans

THE URGENT NEED for steps to convert American ocean shipping and world-wide air transport services from war to a peace-time basis and to establish effective national policies was stressed by members of the International Transport Committee of the U. S. Chamber of Commerce at the conclusion of a two-day meeting last fortnight.

The meeting gave evidence of unanimous agreement on the part of the varied interests represented—shipowners, shipbuilders, airline operators, aircraft manufacturers, exporters, importers and others interested in international trade it was reported by William K. Jackson, chairman of the committee and vice president of United Fruit Co. One point on which there was unanimous agreement was: that extensive overseas trade routes by both sea and air should be established under private ownership and operation as quickly as possible.

In international air transport, in which there has been less experience than in ocean shipping, the committee felt that many new and challenging problems remain to be met.

A question discussed extensively was whether the rights for privately owned planes to fly over designated routes in foreign countries, and rights of transit for commercial planes over similar routes, should be embodied in a general international convention or left to bilateral agreement as heretofore.

The organization of international air services to be operated by U. S. citizens was discussed with a wide range of viewpoints. As in the case of merchant shipping, the problem of disposal of surplus commercial-type planes now utilized for war transport purposes was recognized as of great importance, and it was agreed that disposal policies should be such as not to interfere with a reasonable program of future commercial airplane construction and continuous development of improved types.

Among those attending the sessions were: John C. Cooper, vice president, Pan American Airways; Harry Woodhead, president, Consolidated Vultee; W. A. Patterson, president, United Air Lines; Sam J. Solomon, president, Northeast Airlines; John E. Slater, director, American Export Airlines; J. A. B. Smith, vice president, Curtiss-Wright; R. H. Patchin, W. R. Grace Co.

Government officials who met with the Committee included: Admiral Emory S. Land, chairman, Maritime Commission and War Shipping Administrator; Capt. Edward Macauley and Thomas M. Woodward, members of the Commission; L. Welch Pogue, chairman, Civil Aeronautics Board; Edward Warner, vice-chairman, George C. Neal, general counsel, and Robert L. Bias, assistant to the chairman of the Board.

CAB Plans 'Informal' Study Of International Air Routes

REVEALING THAT it is making an "informal" study of international air transport routes, the Civil Aeronautics Board on Sept. 2 invited all interested persons to submit suggestions with respect to specific international lines which should be operated in the postwar period.

The Board set Oct. 1 as the deadline for suggestions. Its statement follows:

"The Board currently is engaged in considering what international air transport routes appear likely to be especially important to the United States in the postwar period. This study is informal and will be used later as a basis for formal consideration of applications for certificates of public convenience and necessity involving international services. The study does not involve any consideration of the identity of the particular carrier or carriers by whom such service should be operated, but is directed solely to the question of the routes which would be desirable.

"Interested persons are invited to submit to the Board in written form their views as to the routes which appear to them desirable. Such views will be of maximum value to the Board if they are accompanied by supporting analyses and data. In the statement of questions relating to civil aviation issued by it on May 4, 1943, the Board asked what international routes would be of major commercial importance for post-war operations. Persons who answered the question at that time need not duplicate their answers now. Views should be submitted prior to October 1, 1943."

The Oct. 1 deadline has no significance as far as actual consideration of international routes by the Board is concerned. CAB Chairman L. Welch Pogue has stated, however, that the international airline situation will be "unfrozen" as soon as possible.

It is probable that a large number of suggestions will be received by the Board. Some are already on hand, submitted in answer to the Board's questions of May 4 on civil aviation.

Aviation Calendar

Sept. 17-18—Northwest Aviation Planning Council, Wenatchee, Wash.

Sept. 20-22—Aeronautical Chamber of Commerce planning conference, Broadmoor Hotel, Colorado Springs, Colo.

Sept. 30-Oct. 2—National Aircraft Engineering and Production meeting of the Society of Automotive Engineers, Biltmore Hotel, Los Angeles, Cal.

Oct. 5-7—National Safety Congress, Chicago, including meetings of the Air Transport and Aircraft Manufacturing Sections.

Oct. 18-21—American Welding Society annual meeting, Chicago. (Aircraft Section, Oct. 21.)

Oct. 26-27—Annual meeting, Aero Medical Association, Cincinnati, O.

Dec. 2-4—National Aviation Training Association annual convention, St. Louis, Mo.

International Applications to Be Heard When War Permits—Pogue

INTERNATIONAL route applications which are now "on ice" will be "unfrozen the minute the overall war program permits that to be done—regardless of when the war ends," CAB Chairman L. Welch Pogue stated in a radio broadcast during the fortnight.

"The law *requires* that the CAB shall hold public hearings on these applications," he said.

Interviewed by Betsey Jager (Wichita *Beacon-Journal*), Helen Ashby *(United Press)* and Katherine Johnsen *(American Aviation)*, Pogue made the following points:

1. *The Lea bill is of vital importance to aircraft manufacturers as well as the air transport industry.*

"The bill's provisions, designed to aid in the development of transport and private flying after the war will, in turn, aid the manufacturer in making the transition from wartime to peace," he said.

2. *Super-duper airliners are "out" for domestic flights.*

"It is most unlikely that the size of airplanes used within the U. S. for our trunk line service will be as large as some of those that are currently being discussed," Pogue declared. "The very large passenger planes, carrying several hundred people, will not go into commercial airline service immediately after the war, in any event. And when they do, they will probably be used only in the trans-oceanic and very long hop flights. The public prefers smaller planes to giant liners for domestic service for this reason: Planes of 30 to 40 passenger capacity permit more frequent schedules. It is obvious that 10 schedules distributed throughout the day will meet the departure times of many more passengers, than say three schedules. More schedules of this size plane also make possible a greater variety of intermediate points to be served, more personalized treatment of passengers and numerous other conveniences that would not exist in passenger planes carrying 200 or 300 people. . ."

3. *CAB is doing research on traffic, in anticipation of the day when swarms of helicopters and light planes may fill the skies.*

"One of the important research projects now under way at the Board is the study of our present traffic and safety regulations which govern civil flying in the U. S., with a view to adjusting them to the new types of operation anticipated in the development of the helicopter and the new problems arising out of the tremendous increase in light plane traffic," Pogue said. "All that can possibly be done towards the simplification of the rules and conditions under which private pilots will fly after the war, should be accomplished as soon as possible."

4. *Small planes will approximate the price of small autos.*

"I believe that the manufacturer of postwar private planes, benefitting from the production lessons learned under the pressure of war, will price some of these planes in the same category as medium-sized automobiles and possibly within the range of small automobiles," Pogue asserted. "With regard to the cost of operating postwar planes, I think it will be determined by the speed. . . If planes are flown at the slow speed of 100 mph instead of 200 mph, they can probably be flown at a direct cost near that of a medium-sized automobile."

5. *The level of airline fares in the near future is going to be near that of the railroad and the ocean liner, but some of the low fares which have been talked about, such as $100 from New York to London, will not be realized "for some time to come."*

4 Generals Decorated

Four generals, each engaged in the active conduct of aerial operations against the Axis in the European, Mediterranean, and Middle East theatres of operations, were decorated last fortnight as follows:

Maj. Gen. Lewis H. Brereton, commanding general, U. S. Army Ninth Air Force; commanding general, U. S. Army Forces in the Middle East—Air Medal.

Maj. Gen. James H. Doolittle, commanding general, Northwest African Strategic Air Force—Distinguished Service Medal.

Maj. Gen. Ira C. Eaker, commanding general, U. S. Army Eighth Air Force—Legion of Merit.

Brig. Gen. Uzal G. Ent, commanding general, Ninth Bomber Command, U S. Army Ninth Air Force—Oak Leaf Cluster to Distinguished Service Medal.

Gen. Vandenberg Promoted

Brig. Gen. Hoyt S. Vandenberg, veteran of 20 years' service in the Army Air Forces, has been appointed a deputy chief of the Air Staff, the War Department announces. He recently returned from the African front, where he had been in service since June, 1942. Prior to going overseas, Gen. Vandenberg was assistant chief of the Air Staff in Washington, D. C.

Myriad Aviation Problems Face Congressmen, Back From Recess

CONGRESSMEN AND SENATORS returning to Washington this week, after a summer recess, must solve several problems of concern to the aviation industry. Among these are:

RENEGOTIATION—The House Ways and Means Committee will have hearings and studies on the renegotiation law well underway by the time Congress reconvenes. Postwar reserves, renegotiation before or after taxes, and outright repeal of the law will be studied. F. A. Callery, vice president of Consolidated Vultee and Ralph S. Damon, formerly president of Republic Aviation and now vice president of American Airlines, will speak for aviation. The House Naval Affairs Committee is also slated to submit a report as a result of extensive hearings it held on the pros and cons of the law last spring.

TAXES—A new $12,000,000,000 tax bill scheduled for enactment by the end of the year, is likely to involve higher rates on corporation income. The possibility of an increase for aircraft manufacturers is balanced by the equal possibility that special reserves for peacetime conversion may be allowed the aircraft industry, which because of its original small invested capital is discriminated against under present tax legislation.

CIVIL AND COMMERCIAL AVIATION—The House Interstate and Foreign Commerce Committee will take up consideration of the Lea bill from where it left off at adjournment. Observers are pessimistic as to "quick action." Many believe that the legislation, contemplated as "The Civil Aeronautics Act of 1943" will soon have its title changed to "The Civil Aeronautics Act of 1944." Sen. Bennett C. Clark's (D., Mo.) subcommittee of the Senate Commerce Committee, also plans to swing into action on the matter of postwar commercial aviation.

TRANSPORTATION MONOPOLY—Sen. Burton K. Wheeler's (D., Mont.) Interstate Commerce Committee expects to frame legislation outlawing interlocking relationships between different forms of transportation.

PLANE UTILIZATION—Army-Navy logs, now under scrutiny by the Senate's Truman Committee, showing who flew where, when, and why, in official planes, may call for explanations. This probe will be a part of an over-all investigation of the nation's transportation system by the Committee.

AIRCRAFT MANPOWER—A subcommittee of the Senate Military Affairs Committee, headed by Sen. Sheridan Downey (D., Calif.) expects to have a report on West Coast manpower problems ready by the time Congress reconvenes. Downey has indicated that after review of the draft plans of Selective Service Director Hershey for the rest of the year, his group may recommend blanket deferment for all West Coast war plant workers.

DRAFT—Chairman Andrew J. May (D., Ky.) and Sen. Burton K. Wheeler (D., Mont.) have made it clear they will fight to the end to stare off the drafting of pre-Pearl Harbor fathers, at least before 1944.

SOCIAL SECURITY—Congress is expected to study Administration-sponsored extensions of social security laws, but rapid action is not contemplated.

12,000 Per Cent Increase

The biennial report of the Chief of Staff, U. S. Army, to the Secretary of War reveals that expansion of the service units of the Army Air Forces during the past two years has been approximately 12,000%, and that of the Air Force proper about 2,500%.

She's Doing It Again

"Now you see them, now you don't" might well apply to Blanche Noyes' air markers.

Before the war, the CAA's veteran woman pilot had charge of placing air markers (signs on ground structures) throughout the country for the aid of pilots. Since Pearl Harbor she has been engaged in obliterating markers from strips 150 miles deep along the coasts, so they wouldn't be of use to enemy pilots.

Now the Army and the Navy have asked CAA to re-locate flight markers within a radius of 50 miles of training centers for the aid of student pilots.

So Mrs. Noyes is doing it again.

Naval Aviation May Be 'Most Powerful Weapon,' Says Admiral McCain

"Naval Aviation has become an extremely powerful weapon, possibly the most powerful."

Vice Admiral John S. McCain, Deputy Chief of Naval Operations (Air), made this remark last fortnight on the 30th anniversary of Naval Aviation. He listed current assets of the Navy's air arm as follows:

1. Air stations, auxiliary air stations, and air facilities, strategically located throughout the world.

2. Over 100 points served by the Naval Air Transport Service, which is operating over 60,000 route miles.

3. Over a dozen material development, flight test, and aircraft delivery terminals.

4. A 30,000-a-year pilot training program.

5. A 100,000-a-year mechanics training program.

6. Approximately a dozen new combat carriers, launched since the United States entered the war.

7. A large, but undisclosed number of "baby flat-tops," designed for convoy and ferrying, as well as combat duty.

8. An authorized lighter-than-air fleet of 200 airships.

9. Numerous new fields of activity, including Air Information, Aerology (weather forecasting), Combat photography, Photo Interpretation, and Naval Air Transport.

10. Airplane strength multiplied six times in 1941 over 1940, doubled again in 1942, with 1943 deliveries certain to triple that of 1942. (By the end of this year the Navy will have 27,500 planes.)

11. A tremendous construction program, carried out in hundreds of areas, 90% of which was completed by mid-1943. (On August 1, 1943, the Naval aeronautics organization was three times larger than it was at the same time last year.)

ABA Men Lost

A. B. Aerotransport, Swedish airline, lost its chief pilot and three other members of the crew on a flight from England to Sweden on Aug. 27. The pilot was K. G. Lindner, for over 20 years with ABA and one of the best-known transport pilots in Europe. Radio contact ceased in the North Sea area. Swedish airline officials believe motor trouble forced the plane down.

Wing Machine Guns In Action

Three wing guns of a P-40 are shown during a "burst" test on a Buffalo firing range of Curtiss-Wright Corp. Out of sight of the smoking guns is an all-metal wing panel used on the range to simulate actual battle conditions. As this photo was taken, the target was being torn to shreds by the concentrated firepower of the three guns.

Pan American's Postwar Plans, Policies Are Unknown Factors

JUST what constitutes Pan American Airways' postwar plans and policies largely remains an unknown factor in the increasingly complex international air transport picture, but it can be assumed on the basis of conversations with company officials that it has abandoned any idea of fighting for an outright monopoly for its own company as presently constituted, *American Aviation Daily* reported Sept. 8.

It is probably correct to say that PAA has no specific plan as yet for the postwar, and it is also probably correct to say that its current thinking is in the direction of a joint enterprise (a super-airline combine in which domestic companies would have a part) which would give the United States a single-company front to face the world in global air traffic after the war. PAA has always favored a single company in the foreign field and is not likely to change this position as long as there is a vague chance remaining of getting all U. S. aviation interests into one pool for foreign operations. As would be natural, PAA would expect to have an important part in any such combine but the extent of the participation fluctuates considerably.

It is considered most unlikely that PAA will make a public statement of its postwar policies at any time in the foreseeable future, although the company has informed the Civil Aeronautics Board that its delay in filing new route applications must not be taken to mean that such filings will not be made in due course. When PAA does file, it will probably outline what it believes to be the best postwar global routes for a single joint U. S. company.

Although PAA currently favors a joint company, it does not want to take the initiative in pushing such a plan for fear of the obstacles such a plan might meet as coming from PAA. It is hopeful, apparently, that the government will take the initiative in advocating a joint enterprise, and indeed this might well come to pass through the State Department where the single joint-company enterprise is now in high favor. PAA would also welcome a joint-company proposal from the domestic airlines, or from the War Department or the Administration.

The extent of concessions in control which PAA would make in a joint company is a variable factor. One company official has gone so far as to say that PAA would be willing to give up the name of Pan American Airways and would take a "back seat" on the board of directors. The amount of capitalization is also very vague at this stage, ranging from $80,000,000 to $250,000,000, while one government figure has been set at $150,000,000.

But since the name of Pan American Airways is so well known and so deeply entrenched, it is not likely that this name will disappear whatever happens. As for control, the only plan that has progressed far enough to be set down on paper would appear to give PAA rather dominant control although it calls for autonomous operations by participating domestic carriers. But this plan, as are all of the discussions to date, is purely tentative and represents the first stages in the thinking toward a joint enterprise.

Meanwhile domestic carriers with international ambitions are filing, or preparing to file, their plans for networks of routes to various parts of the world. Any specific plan for a joint U. S. super-company will probably have to come from the government, or to have government sponsorship. It is expected that the State Department's recommendations will be complete this week but are subject to approval by Secretary of State Cordell Hull. At last report these recommendations will be for a joint U. S. company embracing financially those carriers (including PAA and American Export) which have international ambitions. It is clear that what the State Dept. wants (at this writing) is a single policy for foreign air transport and it believes a single super-company is the only way to reach this goal even though operations to various parts of the world may be quite autonomous. It wants a single financial and policy-making umbrella. But it is still too early to determine what weight these recommendations will carry, and no one yet has discovered a formula to bring all of the companies together under one roof. The international problems won't be ironed out overnight.

Damon Favors Applying U. S. Air Competition World-Wide

THE "GOOD OLD AMERICAN principle of competition" highlights the recent declaration by 16 airlines regarding international air routes, in the opinion of Ralph S. Damon, vice president and general manager of American Airlines.

On a week's tour of the AA airline system "to learn all I've forgotten about airlines during two and a half years with Republic and to see all the changes in this fluid business," Damon said in Los Angeles, that global routes would be considered under the same policy as the domestic network developed under the CAB.

"People ready, willing and able should be granted a route provided convenience and necessity exists," he declared.

Discussing American's proposed route to London, he stated that he could foresee overnight service with Americans leaving Friday night for an English week-end and returning Sunday night.

In answer to questions concerning frequency of schedules and potential traffic, Damon said that he considered it unwise to forecast air transport traffic on the basis of pre-war steamship passenger traffic.

"The stimulus of air transportation and possibility of week-ends abroad will do much to revolutionize traveling habits," he asserted.

"American has a confidential study on potential business which cannot be released at this time. Naturally, schedules to London would follow the pattern of new schedules launched domestically, starting with a limited number and increasing these as conditions warrant."

Damon was optimistic as to hearings on international routes on which he feels the CAB will have the situation in hand before the war ends, "thus affording a minimum adjustment for both manufacturers and airlines to peace conditions."

He estimates it will take a decade to establish dominant world air routes, and from one to two years after the war ends to establish some "good, clean-cut, prominent examples of international routes."

Close cooperation between manufacturers and airlines is the basis for security within the industry when the government is no longer our sole customer, he concluded.

Ralph S. Damon, who recently returned to American Airlines as general manager after a period with Republic Aviation Corp. as president, is shown with a group of AA officials on the West Coast during his first visit there after changing jobs. Left to right—William Littlewood, vice president of engineering for American; Damon; Waldo Goodyear, flight superintendent at Burbank, Cal.; Capt. Bart Cox, AA pilot; A. R. Bone, Jr., western traffic manager; and Charles Weaver, western superintendent of reservations and ticket offices for AA.

Keep Civil Flying, Military Aviation Separate, British MPs' Report Asks

AIR TRANSPORT'S FUTURE must not be interwoven with military security, four Conservative members of the House of Commons concluded in a recent report which has been widely circulated in England.

The group, which has spent the past six months studying problems of postwar international air transport, was comprised of: Ronald Tree, chairman; W. R. D. Perkins; Group Captain J. A. C. Wright; and Sir Alfred Beit.

Questions of an international police force should be solved by control of military aviation, leaving commercial air transport free to fly its own course, they explained.

A "World" transport system, internationally owned and operated is cancelled out by the Committee, with the explanation that it would not be acceptable to either the U. S. or Russia nor the majority of the present House of Commons. In lieu, the Committee proposed, there should be: (a) an international convention embodying the principles that the first and fundamental concern of air transport is to render genuine public service to the largest number of people; (b) an international authority for the technical regulation of air navigation; and (c) agreed machinery for the promotion of air transport and air commerce between nations.

CAB Cited As Pattern

As for Great Britain, the Committee stated, the Government should: (a) Expand the functions of the Air Registration Board on lines similar to the U. S. Civil Aeronautics Board to include the general duty of planning air routes, hearing applications of airline operators and deciding between them; (b) Invite the Dominions to do likewise and form with the United Kingdom an Empire Air Board, which would act on major questions affecting the development of Empire air transport without infringing on the domestic liberty of each Dominion.

The Empire Air Board should advocate, claimed the Committee, an international Convention which should include the following: (a) The right of innocent passage and of emergency landing should be absolute and universal. "Prohibited areas" should be forbidden; (b) The operation of airlines between two points in the same country or related geographical area should be arranged between the countries concerned on a basis of reciprocity or agreement, the signatories of the Convention undertaking not to refuse such agreement unreasonably; (d) Sovereign rights over airports should rest with the Governments of the countries in which they are located.

There should be an international authority on the lines of the International Conference on Aerial Navigation (set up after the last war) for international standards of aeronautical practice in all technical matters affecting aircraft, staff, airports, navigation, etc. This authority should organize "regional conferences" of operators to establish orderly schedules of operation, freights and fares and to check on unjustifiable subsidies. An effective sanction against breaches of the Convention would be agreement between all signatories that all air transport facilities should be refused to all air lines of the offending nation, for a certain period.

Special arrangements will be necessary for air routes within continental Europe, the Committee reported, and there must be a single European authority along the lines of the Federal Authority of the U. S. A. This would need international agreement among the European nations, but during the period of relief and reconstruction interim air transport services will probably be instituted by the United Nations. The Allied Governments might prepare, as a model, alternative methods for European Air Transport on the assumptions of: (a) European Air Transport Co., in which each nation would be interested on an equal basis to operate European routes; or (b) a European Air Board whose license would be needed by operators within continental Europe.

Under the Committee's plan, European nations with overseas possessions would be free to run air services to such possessions and (excluding the Axis powers so long as they are debarred by the United Nations' settlement) European nations would be free to develop air services to foreign countries on reciprocal basis.

Rules adopted by the Committee for British air lines were: (a) Not more than one air mail contract should be awarded for any route; (b) No single "chosen instrument" should operate more than one trunk route; (c) Shipping railways, road transport and other interests should not be barred from tendering for mail contracts or from participating in or managing such routes; (d) In times of Empire emergency all operating lines should be controlled immediately by the Governments concerned and all flying personnel should be in the Air Forces Reserves.

Most main air routes after the War should be self-supporting but certain air lines may have to be subsidized for the promotion of commerce or for the development of backward areas, according to the Committee. Airmail surcharge is not subsidy, but payment for the proper additional economic value of the service, it stated. Subsidized routes should be operated by a Government chosen instrument and the cost and subsidies should be disclosed to the appropriate Regional Conferences. Special subsidies may be necessary for air lines which are obliged to use uneconomic aircraft for a transition period after the war, the group qualified.

British Group Studies International Policy Of 16 American Lines

First British reaction to the announced plans of American airlines to participate in international transport was publicized during the past fortnight. The Joint Air Transport Committee, claiming to be "broadly representative of British trade and industry" but exclusive of aircraft manufacturers and airline operators, made the following statement:

"Arising from the recent conference of United States airlines in Washington, two statements of policy have now been issued. The representatives of 16 airline companies urge that there should be free and open competition on the international air routes, whilst three companies assert the need for a single combine.

"The Joint Air Transport Committee is only interested in and would only express itself upon, these developments in so far as they touch upon the British problem.

"The majority statement enunciates Five Principles, of which the first reads: 'Free and open competition—world-wide—subject to reasonable regulation by appropriate Governmental agencies.' The reports received did not specify at what date these proposals should become operative, though it is to be feared that they are intended for immediate postwar application. If this assumption is correct, the Committee suggests that such a proposal might well have further consideration. Because of sacrifices made in the common cause, there is not a single one of the European countries among the United Nations which will not for some little time after the war be in a gravely embarrassed position to join in 'free and open competition' with the United States. After a period of years this healthy competition may well be possible and desirable, but until then it is suggested that it would be wiser to adopt the Joint Committee's proposal for regulated competition, with each State having its fair allotted quantum, and the United States and the British Empire having parity in terms of a mutually acceptable yardstick.

"The question of freedom of transit in peaceful flight—world-wide—should, it is felt, be determined on its merits. That issue is likely to be obscured by the introduction by the 16 airlines of the contentious question of the future availability to U. S. flag carriers of air fields which,

(Turn to page 32)

Test Yourself

The following geographical test is being given at the Airways to Peace exhibition at the Museum of Modern Art in New York City. Want to test yourself? The answers are on Page 32.

1. Which is nearer to New York—Berlin or Dakar?
2. What percentage of the world's population has the U. S., 15% or 6%?
3. If Germany wanted to attack Alaska, would it first attack Spitzbergen or Iceland?
4. The antipode of Gibraltar is Alaska, or New Zealand?
5. What percentage of the earth's population lives north of the equator, 93% or 67%?
6. What city is farther north, Venice or Vladivostok?
7. What percentage of the world's land area does Europe occupy, 6% or 16%?
8. What city is farther east, New York or Santiago?

Trail Blazing in the Skies

1934

THE ART OF FABRICATING AIRCRAFT STRUCTURES was greatly advanced by a series of unique strength-model tests developed by Goodyear Aircraft Corporation in 1934. A method was devised by which the performance of full-scale air frames can be accurately determined by model tests. These tests provide exact duplication of axial, bending, torsional and shear characteristics of prototype members—under various load combinations. As a result, stresses, strains and effect of loads on all types of aircraft components can now be determined by aircraft designers more precisely than ever before.

1943

APPLICATION OF THESE PRINCIPLES in the construction of airplane components has enabled Goodyear Aircraft to design and fabricate intricate aircraft structures meeting the highest standards for strength and quality. That Goodyear parts meet the most rigorous specifications of the industry and the air services is emphasized by the great variety of tail, wing and fuselage assemblies we are producing for a number of manufacturers of America's most famous warplanes, both bombers and fighters—and is further exemplified in our own output of complete airships and the Corsair FG-1.

How Goodyear Aircraft Corporation Serves The Aircraft Industry

1. *By constructing subassemblies to manufacturers' specifications.*
2. *By designing parts for all types of airplanes.*
3. *By re-engineering parts for mass production.*
4. *By extending our research facilities to aid the solution of any design or engineering problem.*
5. *By building complete airplanes and airships.*

GOODYEAR
AIRCRAFT

Revised CAA-DPC Agreement For Lease of WTS Planes Approved

THE COMPTROLLER GENERAL on Sept. 2 approved an amended agreement between CAA and the Defense Plant Corp. for lease of aircraft used in the War Training Service pilot training program. Two months legal wrangling have produced a satisfactory agreement which differs only in minor technicalities, remaining essentially the same in intent.

The original lease, signed February 18 by CAA and DPC, was condemned on July 10 by the Comptroller General for failing to contain "the essential elements of a bona fide lease agreement" and was branded as a "subterfuge designed to relieve the CAA of the duty and responsibility of submitting to the Congress an estimate for additional funds."

CAA officials are puzzled, now that everything is settled, as to the faults with the original lease, which was modeled on one between DPC and the War Department providing for the purchase by DPC of buildings and other facilities which were leased to the War Dept. and subleased to the civilian primary flight training schools. This agreement has never been questioned, yet the CAA duplicate was branded "bad law" and a "disguised purchase agreement." In the new agreement CAA eliminated the clause which provided that "upon payment in full by CAA to DPC of the amounts expended by it for . . . . such aircraft or in connection with said lease . . . DPC will upon request of CAA transfer such title or interest as it may have in the aircraft then covered by said lease to CAA."

However, this elimination of any suggestion of disguised purchasing power was not acceptable either. At the instigation of the Comptroller General a "recapture clause" was inserted in the new agreement which states: "It is specifically agreed and understood between the parties hereto that when the rent paid by the administrator to Defense Corp. for one or more aircraft equals the cost of said aircraft . . . (plus direct expense and interest) Defense Corp. will, upon the request of the administrator, transfer title of said aircraft to the administrator."

Another equally significant change was ordered in the agreement. In the original, rental payments were made over a period of two years at the rate of 1/24th of the total cost to DPC each month. In the new lease, the administrator agrees to pay rental at the following rates:

For each aircraft of the type used for elementary pilot training, $60.00 per month.

For each aircraft of the type used for secondary pilot training, $300 per month, etc.

These monthly rentals are actually 1/24th of the total cost of each plane.

The arrangement with DPC was made in February when War Training Service was called upon to expand its program of training Army and Navy aviation cadets. The termination of manufacture of light planes to make possible expansion of combat plane production skyrocketed the price for second hand planes. Few WTS contractors had sufficient planes to carry out their expanded schedules or enough money to buy more at the current inflated prices. WPB Limitation Order L-262 was drawn up to freeze the sale and transfer of light planes, placing a ceiling on prices and making all light planes available for the WTS program. Under then existing agreements made in connection with the CPT program, CAA paid rent to the civilian contractors on planes used to train military personnel. Rents set at that time enabled contractors to pay amortizations and obtain ownership of the planes in two years. The arrangement made between WTS and DPC in February not only provided the necessary planes when contractors could not afford them, but amounted to a substantial saving to the government by making planes available rent free at the end of two years.

After February 18, DPC began buying planes and leasing them to CAA which in turn sub-leased them to its WTS contractors. WTS at that time had $8,380,178.96 in unexpended funds from its appropriation for the fiscal year 1943, which it desired to use in payments of rental to DPC. On July 10, the Comptroller General stated that although he did not find the agreement between DPC and CAA binding on CAA he had no objection to the use of the funds for that purpose. By that time DPC had bought 5,024 planes and link trainers at a total cost of $11,934,538 for WTS. When CAA applied to the Bureau of the Budget for permission to use its $8,000,000 to pay as much of the rental due DPC as possible, they were refused on the ground that there had been found no obligation to pay rental on CAA's part.

Now after an additional two months in which lease agreements have been drawn up and disregarded, a new agreement, acceptable to all concerned has finally been reached. With the approval of the Comptroller General, it is understood the Bureau of the Budget will now accede in the demand that back rental be immediately paid to February and that monthly rentals will be paid from now on, until DPC has recovered its costs. The title to the planes will then be transferred to CAA.

Ebbitts Joins *American Aviation Associates* As Public Relations Chief

Robert H. Ebbitts, Jr. has been appointed director of public relations, and trade - representative - in -the - field, of American Aviation Associates, Inc., publishers of *American Aviation, American Aviation Daily, American Aviation Reports, American Aviation Directory* and *Universal Airline Schedules.*

Ebbitts

Ebbitts, former Interline Traffic Manager of Eastern Air Lines, has nearly 15 years' experience in air transportation, beginning in 1930 as chief of passenger service for Ludington Air Lines, the pioneer airline between Washington and New York. He will make his headquarters for American Aviation Associates, Inc., in the Airlines Terminal Building, 80 East 42d Street, New York City.

Alabama Creates Air Board; Gov. Sparks Names 5 Members

Gov. Chauncey Sparks of Alabama recently appointed the following as state aviation commissioners:

W. Hayden Brooks, Birmingham, chairman; Frank Hulse, Decatur; O. N. Barney, Mobile; Harold F. Wood, Birmingham; and J. B. Carl, Tuscaloosa.

E. W. Stanford of Montgomery was named Director of Aeronautics.

The new Alabama Aviation Act, which was passed by the state legislature at its last session, without a dissenting vote in either the House or the Senate, has been approved by the governor. The Act created the commission and provided that it foster the development of aviation "in every form" within the state.

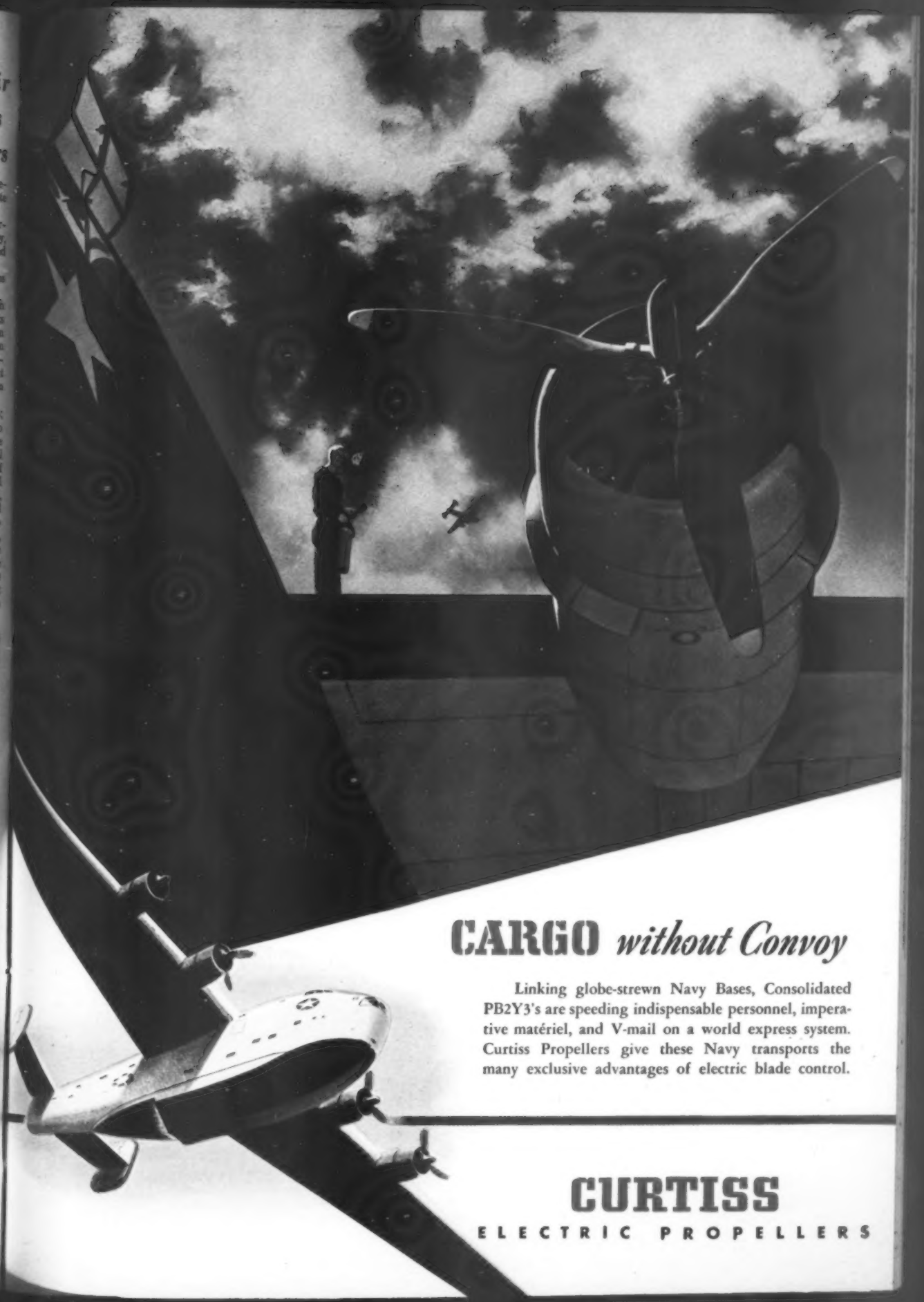
A letter from Chairman Brooks states: "It is not the intention of this Act to put any hardships on either the private flier, fixed base operator, or commercial aviation in any way. Registration of pilots and aircraft is required, and a small fee for such registration will be charged, but such fee will not be charged until October 1, 1944. It is not the intention to raise money by charging registration fees, but the Act would not be legal in the State of Alabama unless certain fees are charged. Aircraft of the United States government and commercial air transport companies are excluded from regulation under the Act."

Other State News

Col. Thomas F. Sullivan of Boston, state conservator of Massachusetts, has been appointed chairman of the Massachusetts Aeronautics Commission by Gov. Leverett Saltonstall.

The first step in development of a North Carolina governmental program for aviation expansion will be taken in Charlotte, N. C., the state capital, this week when the State Aeronautical Commission will hold the first of a series of hearings, giving Western North Carolina men interested in aviation an opportunity to express their views and submit recommendations. The commission will summarize its findings in these hearings and submit a report to the next session of the North Carolina General Assembly.

The Maine State Aeronautics Commission is mapping a program "to put our state ahead of the parade after the war," including expansion of airports and acceleration of aeronautic facilities. The program will draw together municipalities "to work cooperatively to develop postwar aeronautics."

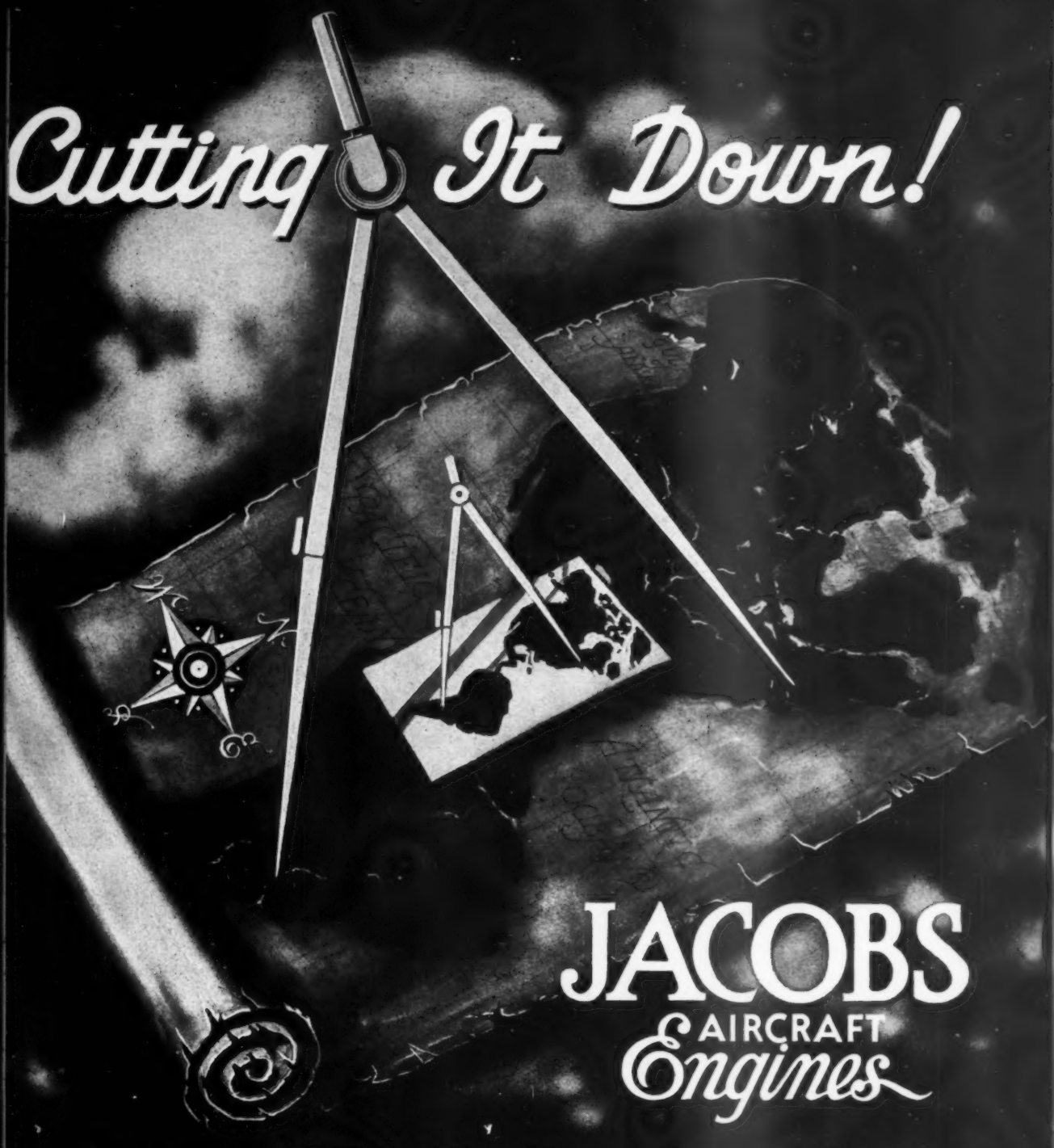


CARGO *without Convoy*

Linking globe-strewn Navy Bases, Consolidated PB2Y3's are speeding indispensable personnel, imperative matériel, and V-mail on a world express system. Curtiss Propellers give these Navy transports the many exclusive advantages of electric blade control.

CURTISS

ELECTRIC PROPELLERS



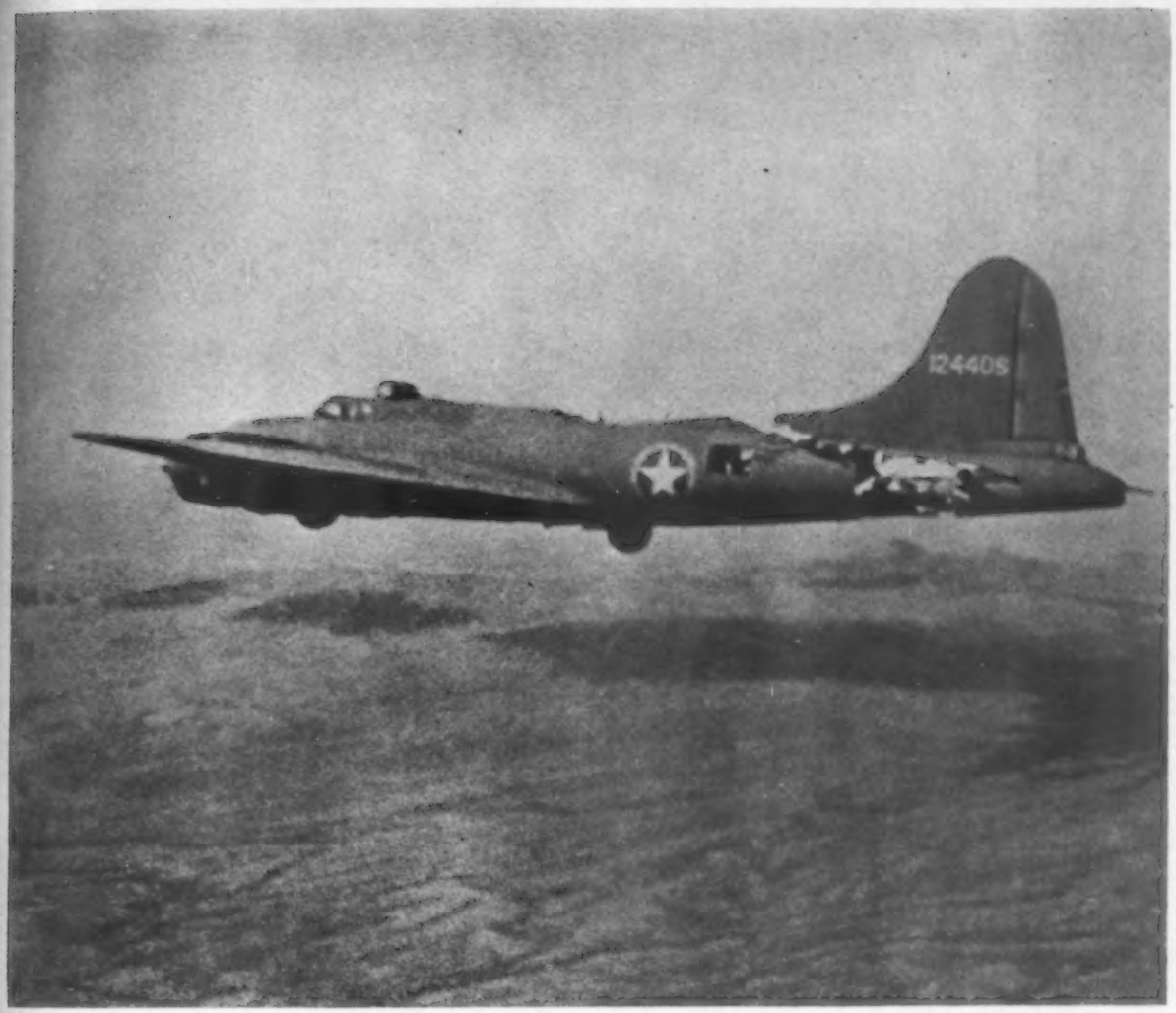
The old map is rapidly being cut down—distances are being reduced from days or weeks to hours.

The countries of Latin America, once our distant friends, are truly becoming our next-door neighbors. Inter-American travel will grow by leaps and bounds after the war. The vacationist will be able to swim at the glorious beaches of Rio on Saturday and be back at work Monday. Round trips on business during the week will be commonplace.

Modern light Airliners, powered by efficient, dependable Jacobs Engines, will provide rapid and easy travel from the international airline terminals to the interiors of these countries, opening their unlimited resources and beauty to us all.

All this will come after the war—but how soon it will come depends on how well we do our War Job NOW.

JACOBS AIRCRAFT ENGINE CO.
POTTSTOWN, PENNSYLVANIA, U. S. A.



Back the Attack—with War Bonds

No Achilles Heel

This slashed-in-two Flying Fortress* theoretically should not fly. There had been stiff fighter opposition. In the melee, a Messerschmitt, crazily out of control, crashed into it.

The German plane was destroyed on impact. The Fortress' fuselage was ripped diagonally from top to bottom. Control surfaces were carried away. The tail gunner, suddenly imperiled in his wabbling section, crawled forward over the narrow floor structure that held the parts together. And the Fortress flew steadily for an hour and three-quarters —back to her base for a perfect landing!

Often the question is asked about Boeing Fortresses: "*How can they do it?*" One Fortress came home with 2000 bullet holes, and with big areas of both wing sections shot away. Another had a hole in the fin "large enough for the navigator to walk through." Others have come in with rudder and elevator controls sheared by gunfire.

How can they do it?

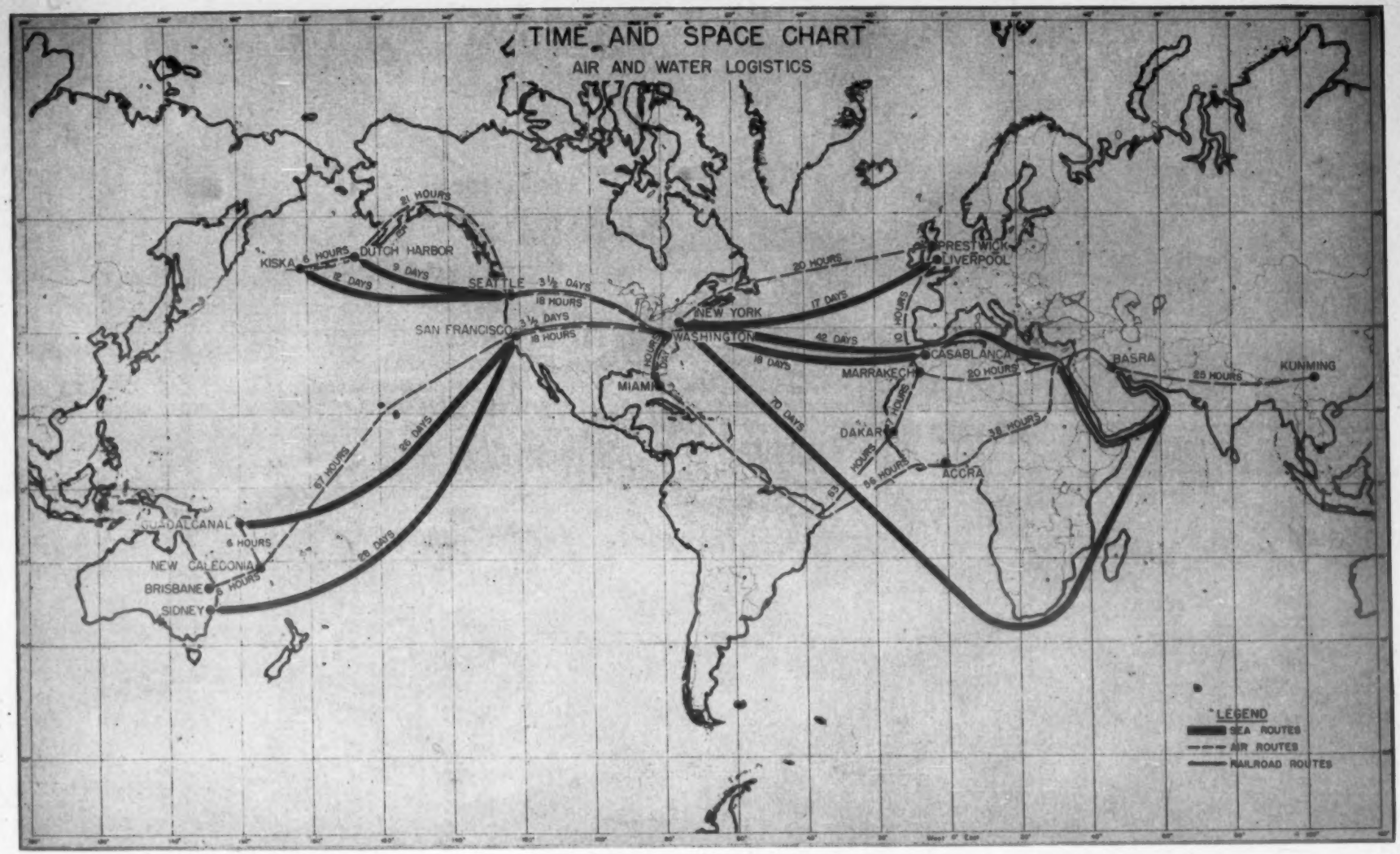
One reason is Boeing design. The Fortress has no Achilles heel, no highly vulnerable spot for the enemy to attack. No single structural member has to carry the entire load for its section; even when large portions of the plane are badly damaged, the Fortress usually is strong enough to remain aloft, fight off its enemies, and return home.

There are other reasons, of course — many of them. But they all stem from what has been termed the integrity of Boeing products. Soundly and conservatively engineered, honestly built, these products always have done more than has been expected of them. True today, it likewise will be true in peacetime tomorrow . . . if it's "Built by Boeing" it's bound to be good.

DESIGNERS OF THE FLYING FORTRESS • THE STRATOLINER • PAN AMERICAN CLIPPERS **BOEING**

*THE TERMS "FLYING FORTRESS" AND "STRATOLINER" ARE REGISTERED BOEING TRADE-MARKS

Air Transport's Value in Modern War



Perfect illustration of the use of air transportation in modern war is shown in the above map, which was contained in the biennial report of Gen. George C. Marshall, Chief of Staff of the United States Army, to the Secretary of War. From San Francisco to Australia, for example, is a 28-day trip by water, and only 73 hours by air. The map, drawn on a scale of one inch to 900 miles, was prepared by the Military Intelligence Division, General Staff, U. S. Army. Gen. Marshall's report was released Sept. 8. He had high praise for the manner in which the Air Forces have carried the war to the enemy.

Agreement Sought on Methods of War Contract Termination

ALTHOUGH there is general agreement in Washington on basic principles regarding contract termination, methods to guarantee the accomplishment of these principles remain the chief source of contention.

Principles on which the inter-agency committee, government procurement agencies, and private contractors are agreed include: (1) contractors and subcontractors must be given prompt or advance cash payments; (2) provision must be made for the payment of discharged employes; (3) everything must be done to make possible swift conversion to civilian production.

Disagreement over the details of claims will inevitably delay final settlements, Dr. J. Stanley Teele, deputy director of WPB's Procurement Policy Division told the Chicago Association of Commerce on Sept. 1. Dr. Teele, who is WPB's representative on the inter-agency committee to formulate a termination article said:

"Consideration of the difficulties inherent in providing funds quickly through final settlement has caused many people, both in and outside the government to explore methods of providing cash quickly prior to final settlement. Three principal proposals have thus far emerged—advance payments, loans, and purchase by the government of the rights of subcontractors."

Dr. Teele pointed out that "present procurement agencies provide for partial payments in advance of final settlement." The recently issued War Department Procurement Regulation 15 states that full use must be made of the provisions of termination articles relating to partial payments, so that all amounts which are clearly due to prime contractors and through them to their subcontractors and suppliers will be paid at the earliest possible moment. The field staff of the Army Service Forces has been instructed to make use of available advance payment balances to alleviate financial hardship pending final determination of termination charges.

"Many war contractors and subcontractors are greatly over-extended and are doing a volume of business wholly out of proportion to their working capital," the regulation states. "They may suffer acute financial embarrassment if they do not receive very promptly a substantial part of the amounts owing to them on terminated contracts.

"Such interim financing is essential in order to provide ready working capital for such contractors and subcontractors quickly so that they will be enabled immediately to carry on or convert to other war work or, in the event of post-war termination, to undertake other productive work. The importance of making every reasonable effort to effect partial payments at the earliest possible date cannot be overemphasized."

Teele points out that the amount which is "clearly due" may be uncertain and that it has been suggested some form of fixed percentage advance payment be made mandatory.

"Sen. Murray has already drafted a bill," Teele said, "which provides that every Federal department shall, within 30 days after the filing of a demand by the contractor, pay to the contractor not less than 75% of the amount certified by him to be due on such contract. Sen. Murray's bill goes on to extend the same right to subcontractors."

Teele declared himself "heartily in favor of mandatory advance payments on the certification of the contractor."

The extension of the V loan on September 1 provides one method for guaranteeing "quick cash" to contractors. This broadening of the plan will enable contractors to obtain the use of most of their working capital immediately upon termination of their contracts. Subcontractors and suppliers will also be protected, because a borrower will be required to pay them whatever he owes as a basis for obtaining the V loan. Although the move was made in the interest of maintaining full production for war by eliminating any fears that capital would be tied up as contracts are cancelled in response to swiftly changing war requirements, it is generally considered an important contribution toward solution of the termination problem. Industry spokesmen expressed the fear, however, that contractors might not be farsighted enough to arrange for loans before it was too late.

Teele pointed out that the "great advantages" of the V loan are "that a single transaction can provide funds on many hundreds of contracts, and that the company which has both prime and subcontracts, a situation so common that it is almost typical, can lump them all together.

"I believe that such a program is desirable and that it can be administered in such a way as to be not at all inconsistent with the program for mandatory advance payments on certification," he said.

In this connection, a third proposal has been made allowing quick payments to subcontractors and assurance that their claims will be paid even if their customer becomes insolvent. According to Teele, the proposal is that the government be authorized by legislation to purchase the rights of the subcontractors against their customers.

"The subcontractor would have to take his chances on payment for items delivered but would have a chance to secure payment from the government on his rights for the uncompleted portion of the contract," he explained.

Provision in Procurement Reg. 15 for payment to the subcontractor is generalized to the extent that any regulation, such as then suggested above, could be appended. It states only that "prime contractors must be pressed to effect prompt, fair and reasonable settlements of their outstanding commitments to subcontractors and suppliers and pass on to them a reasonable share of partial payments on account of terminations."

Money payments to workers laid off because of termination of contracts is a problem which is being seriously studied by the inter-agency committee. Many business men have raised the question whether dismissal wages paid to workers would be regarded as costs reimbursable by the government in the settlement of terminated contracts. Teele explained that if we were to avoid pressure by labor to pursue the inadvisable course of continuing and tapering production, it would be necessary to work out satisfactory methods of compensating workers during their idleness and financing their transfer to other localities. No concrete proposals have been made to solve this problem by any procurement agency.

The final problem which is currently being considered by the inter-agency committee is that of removal promptly from plants of raw materials, work in process,

(Turn to page 32)

Fortress Gets 'Fangs'

The new frontal positions for the .50 caliber machine guns of the Boeing Flying Fortress are shown above. The new positions are said to be a special answer to Nazi combat pilots who recently have been swooping in head-on on their intended prey.

Paratroopers

Americans in Rio de Janeiro on official business are called "American paratroopers" because they are so numerous and because they all have arrived by airplane. Brazilians often refer to the "paratrooper invasion" from the North. There has been no way to reach Rio except by airplane since the start of the war.

Chief of Staff of the United States Army, to the Secretary of War. From San Francisco to Australia, for example, is a 28-day trip by water, and only 73 hours by

was released Sept. 8. He had high praise for the manner in which the Air Forces have carried the war to the enemy.

Reserves for Postwar Changes 'Desperately Needed,' Says Callery

Reserves for postwar transition are "desperately needed" by aircraft manufacturers, in the opinion of Francis A. Callery, vice president of Consolidated Vultee Aircraft Corp.

"The question of reserves for postwar transition is perhaps the most important single problem now confronting the aircraft industry," he said in a recent statement. "It may well happen that our industry will be delivered to the automobile companies or other companies left with adequate capital after the war unless we receive enough resources to continue in business."

Callery strongly advocates revenue law revisions to give aircraft manufacturers such reserves. He contends that stockholders in aircraft companies have not profited from the war, "in fact they are not as well off as they were a year or so before Pearl Harbor," he says.

To substantiate his statement, Callery takes the figures for six large airframe manufacturers—Boeing, Consolidated Vultee, Douglas, Lockheed, North American, and Martin.

"In 1938, the average price of the shares of these companies ranged between $41.70 high and $22.81 low," he points out. "In 1940, the high was $42.97 and the low $25.72. In 1943, the range so far has been $29.97 high and $21.91 low. The present average price is approximately $24.90. There have been no market profits. The average dividend for the six companies was $1.06 per share in 1939; $1.96 in 1940; $2.79 in 1941; and down to $1.96 in 1942.

"Stockholders have not profited either by large government investments to expand manufacturing facilities. They would have been better off if their business had not been expanded to wartime's high levels. Consolidated, as an example, earned $8,000,000 in 1941 without government facilities. It earned $9,000,000 in 1942 using government facilities such as the new $22,000,000 parts plant in San Diego. The money poured into aircraft has not gone to stockholders. Reported earnings have gone up from $1.83 per share in 1939 to $12.18 in 1942, which appear excessive, except that profits are merely stage money."

Reserves, he feels, are of paramount importance. Consolidated's business expanded from sales of $3,600,000 in 1939 to $304,000,000 for year ending Nov. 30, 1942. Sales estimated for 1943 are over $650,000,000, The net working capital, however, was $9,000,000 in 1942 after figuring renegotiation. This is about 2.25% of sales for the year, and less than 1.5% of estimated sales for current year. This figure of $9,000,000 is the company's entire working capital, and it is just about equal to two week's payroll, he points out.

Two Bottles—But No Beer

Two beer bottles—filled with water!

This unusual cargo recently was flown by Panair do Brasil, Brazilian affiliate of Pan American Airways, from the upper reaches of the Paraguay River to Rio de Janeiro. The water, a carefully-drawn sample from the river, was needed for bacteriological examination in Rio by an engineering firm planning the first municipal water supply system for Paraguay's river-side capital—Asuncion. Twelve hours after the sample had been drawn it would have been useless for examination, and the only way to meet the time limit was to rush the shipment by air.

Device for Study of Ice Formations

Ice formations are produced on whirling propeller blades through use of the outrigger shown above on a B-24 Liberator bomber. Water stored in tanks in bomb-bay of ship is sprayed into No. 2 propeller through the outrigger while plane is in flight. Engineers at the Army Air Forces Materiel Command, Wright Field, O., use the device to study ice formations at high altitudes. A camera, installed inside plane, is synchronized with propeller speed in order to take detailed photos showing the rapidity with which ice builds up and is thrown off propeller.

New-Type Bomber To 'Dwarf' Flying Fortress - Arnold

Super-bombers, armed with heavy-caliber cannon of an entirely new principle of operation and dwarfing the present Flying Fortresses, soon will go into action, Gen. H. H. Arnold, commanding general of the Army Air Forces, predicts in the current issue of *Army Ordnance*, publication of the Army Ordnance Association.

"If you will glance into the near future," Gen. Arnold writes, "you can see a very different picture than the one of today. The bombers will dwarf our present Flying Fortresses. They will carry half a carload of bombs across the Atlantic and fly home without stop. The bomber's skin will have numerous 'blisters' which in reality will be multiple-gun power turrets controllable from sighting stations. Sights that compensate for almost every possible error encountered in firing on a fast-moving aerial target will control the guns—sights as revolutionary as our present bomb sights.

"The plane will have 'eyes' that help guide it to its target, or warn and plot the course of interceptor aircraft. It will carry bombs of an entirely different design. It may mount heavy-caliber cannon of an entirely new principle of operation. Fighter planes will have advanced almost beyond recognition in form and in the combat equipment they carry."

(Engines for the super-bombers predicted by Gen. Arnold are now being built in a plant of Wright Aeronautical Corp., it was announced Sept. 1 in Paterson, N. J., by the Army Air Forces. The bombers are to be powered by Cyclone 18 engines. The Wright factory is now in operation 24 hours a day with thousands of workers trained especially to operate the new-type high production machine tools installed to speed production of the new planes, the announcement said. Full details of the engine itself were not announced.)

August Production Shows Increase

Aircraft production during August continued the slow, unspectacular rise evidenced in June and July. The total of 7,700 planes predicted fell short, for when all reports were in the total was slightly less than 7,600—a 3% gain over July's total of 7,373.

Outstanding production, however, was achieved in heavy bombers and transport planes, which showed good gains over July. Official WPB interpretation of the continued failure of aircraft production to reach its monthly goals is "manpower shortages and turnover."

Production, down below July averages in the first two weeks of August, increased substantially during the latter half of the month but not sufficiently to reach the 8,000 mark. WPB spokesmen anticipate real jumps in totals as soon as the new plan for manpower priorities on the West Coast has been in operation a short time.

HOW U. S. ROYAL STATIC CONDUCTOR TIRES BURY STATIC WHEN THE AIRPLANE LANDS

For years, automotive and aircraft engineers have known that static electrical charges built up during the run must be "bled off" before they can cause damage. The familiar chain that trails behind gasoline trucks is one way the problem has been licked in highway transportation.

But in the air, a trailing chain or dragging wires are not satisfactory answers. So the problem was put up to the rubber chemist. "Could rubber that had always been regarded as a perfect insulator be made over into a good conductor of electricity?"

U.S. Royal Static Conductor airplane tires are the answer to that question. Through rubber chemistry and tire engineering, these tires have become conductors of electricity. They provide a path which leads the static charges harmlessly into the ground. These new tires reduce the hazard of sudden shock to ground crew men and the danger of fuel fires caused by static.

U. S. ROYAL
Nose Wheel Tire

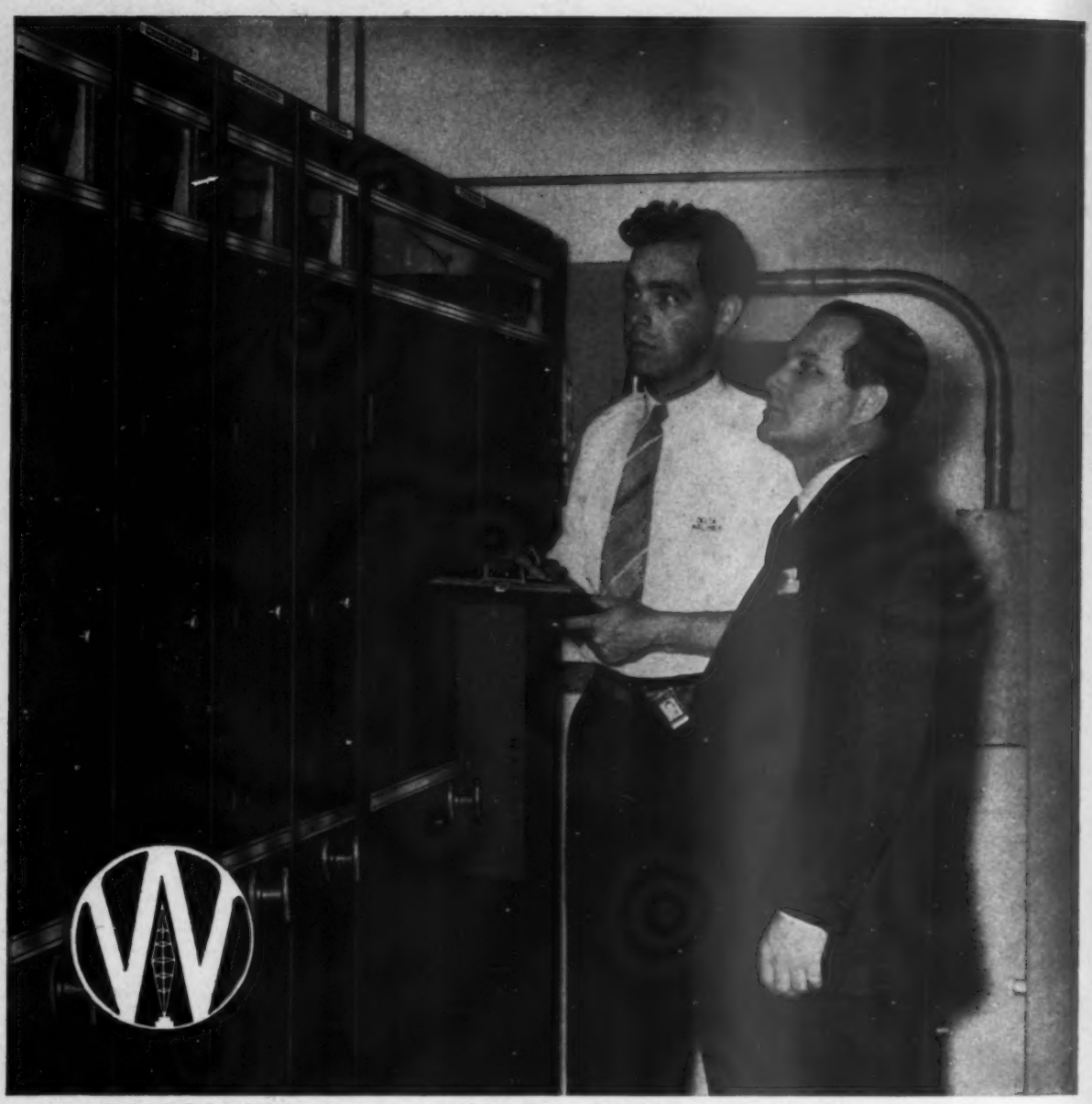
U. S. ROYAL
Landing Wheel Tire

U. S. ROYAL
Tail Wheel Tire

U. S. ROYAL
Ice Grip Tire

UNITED STATES RUBBER COMPANY

1230 SIXTH AVENUE • ROCKEFELLER CENTER • NEW YORK 20



(Right) L. T. Campbell, Supt. Communications, Delta Air Lines, with J. B. Kramer, at Wilcox installation, Atlanta Station.

SERVING THE NATION'S AIRLINES

Wilcox equipment has been used by the major airlines for many years...and while, today, Wilcox facilities are producing largely for military needs, the requirements of the essential airlines also are being handled. Look to Wilcox for leadership in dependable communications!

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Allied Plane Output Caught Up With Axis Early in '42 Wall Street Firm Reveals

Allied output of military aircraft caught up with Axis output during the first two months of 1942 and ever since then has been surpassing Axis output at an ever-increasing rate, according to a tabulation based on estimates by a Wall Street financial house.

By the end of August the Allies had produced a total of 226,720 aircraft since Jan. 1, 1938, as against a total of 147,000 by the Axis, leaving an over-all margin in favor of the Allies of 79,600.

The tabulation showed the Allies lagging far behind the Axis during 1938, 1939 and 1940. Not until the summer of 1941 did the Allied production begin to catch up, and not until February, 1942, did the output per month surpass that of the Axis. From then on Allied output increased steadily while Axis production remained fairly stationery at about 3,000 airplanes a month. By the end of 1943 the Allied will have produced about 270,000 airplanes since Jan. 1, 1938, as against an Axis total of 160,000.

Northwest Aviation Council Adopts Postwar Theme For Its Convention This Week

Prominent aviation leaders are scheduled to take part in the Northwest Aviation Planning Council's annual session, September 17-18, at Wenatchee, Washington. The theme of this year's meeting will be "Targets for Tomorrow."

Speakers will include Charles I. Stanton, CAA administrator; Paul Morris, district manager of CAA, Seattle; Lt. Col. Earl L. Johnson, national commander, CAP; Major Harry Coffey, Wing Commander, CAP, (11 Western states); C. P. Graddick, manager of air mail and air express for United Air Lines; Hainer Hinshaw, assistant to president of UAL; P. H. Cummings, air traffic executive, Railway Express Agency; Thomas Wolfe, vice president, Western Air Lines; Lester Loble, president of Helena, Mont., chamber of commerce; Lester Devaney, Director of Aeronautics, State of Oregon; Frank Judd, division superintendent, Northwest Airlines.

Sec. Knox Discounts Value Of Helicopters and Blimps In Anti-Submarine Warfare

Secretary of the Navy Knox told his press conference September 7 that no helicopters have as yet been obtained by the Navy, although several experimental models are on order. He said helicopters still lack the lifting power to carry a sufficient load of bombs, but added that "ultimately, they probably will have it."

Knox pointed out that the hovering characteristics of both helicopters and blimps are now disadvantages "since German submarines have taken to coming to the surface and fighting it out." Greater use of escort carriers has increased the Navy's protection against submarines because they bring planes to areas where they are needed, he said.

Lawyer Shortage

There is a greater shortage of aviation attorneys than at any previous time. Some companies are begging for young lawyers who have some knowledge of aviation law. This is especially true with the airlines. No one seems to know why there is such a dearth of legal material. Even just before the war before young men were drafted there were any number of openings, including especially law work in Washington. Attorneys for aviation accounts requiring Washington representation are in big demand.

Midway-to-Honolulu Hop Made by P-40 Squadron

A group of Curtiss P-40 fighter planes equipped with auxiliary fuel tanks recently completed the longest non-stop, mass flight of single-engine military aircraft in history, Curtiss-Wright Corp., announces. The planes spanned 1,300 miles of ocean from Midway Island to Honolulu.

The flight was made by 22 pilots of a squadron attached to a fighter group under command of Lieut. Col. Aaron Tyer. The Midway to Honolulu overwater hop was completed in six and one-half hours, and the amount of gasoline left in each plane on arrival at Honolulu ranged from three to 12 gallons, the announcement said.

"To conserve fuel on the long flight, the P-40s were throttled down and flown at 10,000 feet ceiling except for a short distance at 2,000 feet during bad weather conditions," it continued. "There was no attempt to fly in formation as each pilot, following instruction issued by Col. Tyer, adjusted his plane for the most economical fuel consumption."

Gulf Oil Co. Offers To Pay New York City $2,100,000 For Idlewild Gas Rights

Gulf Oil Company will pay New York City $2,100,000 for the right to sell oil and gasoline at the Idlewild Airport, now under construction, Mayor La Guardia revealed last fortnight. The New York mayor said that the offer was made in response to invitations for bids on a 10-year contract.

The proposal will be sent to the city's board of estimate for approval, and later the mayor will ask the city council to earmark the $2,100,000 for use on further construction at the airport site, he said. On a percentage basis, he added, the company will pay the city an estimated $1,000,000 a year out of the proceeds of sales of gasoline and oil, or a sum equivalent to the amount needed to pay debt service charges on $30,000,000 of the total cost of building the new airport. The contract, if approved, will become effective when the airport is opened to traffic.

"This gives one an idea of the volume of traffic we will have at this new airport," Mayor La Guardia said. He added that "prudent business firms are not putting up $2,100,000 for the privilege of getting a concession if they do not have confidence in the great future of our great city."

Attend Fairchild's 'Grand Award' Day

Fairchild Aircraft celebrated 'Grand Award' Day at its Hagerstown, Md., plant recently. Attending ceremonies honoring those employees submitting the most valuable production suggestions of the past year were, left to right—B. J. Hoffman, Fairchild labor-management coordinator; Edward Place, editor of Labor-Managment News; Sherman M. Fairchild, chairman, Fairchild Engine & Airplane Corp.; Theodore Quinn, executive director, War Production Drive; Charles E. Wilson, vice-chairman, War Production Board; J. Carlton Ward, Jr., president, Fairchild Engine & Airplane Corp.; Brig. Gen. Frederick M. Hopkins, Jr.; Richard S. Boutelle and Paul J. Frizzell, general manager and assistant general manager, respectively, Fairchild Aircraft Division.

Improved Rail Service Urged to Meet Postwar Air Competition

A RAILROAD OFFICIAL warned his own industry last fortnight that it may "quickly drop from the consideration of a majority of travelers" in the postwar period unless it improves both operations and equipment.

Writing in *Railway Age*, trade publication, Max Goodsill, general passenger agent for Northern Pacific Railway Co., gave an indication of the railroads' postwar thinking by urging more cooperation between the companies to give more convenience to passengers.

Pointing out that the railroads face stiff competition from the airlines, bus companies and private automobiles, he suggested that the railroads profit by their experience in the operation of through troop trains, and attempt to move postwar passengers with the same expediency.

"Once more trains are back in the billion-dollar-per-year income class, but the same husky competitors, who threw them for a loss before, plus a lively new contender, are all eagerly poised and they will be in a pretty good condition to wrestle public favor away," said Goodsill.

Today there are 574 steam railways to serve the U. S., he stated, adding: "Each railroad has certain territory of its own and certain distinctive rights and advantages, which its managers, on behalf of the owners, are obliged to defend. There are mortgages to pay, stockholders and employes to satisfy, liabilities and payrolls to meet, property and the traffic interests of local communities to protect, and the railroad's own identity and reputation to sustain.

'Cooperation Needed'

"Conscious of these responsibilities, when watchdogs of the railroads meet together, is it not honest to admit that each is inclined to shield his own bone? To think in terms of inter-carrier operations is not so easy for some railroads having particular local advantages—yet, for the common cause, against common rivals, a greater cooperation must progress among railroads if they are to prosper . . .

"With peace again, when a travel-hungry public sees the open highways and barrier-free skies, the railroads may quickly drop from the consideration of a majority of travelers, unless they move rapidly to provide equipment and operations which will attract patronage, enough patronage to support good trains and to promote their progress. The customers will want ease and economy of travel; they will want open ways on the rails, as well as on the highways and in the skies. What can be done to give this to them?

"Troop trains now move as on an intercarrier system, the men aboard seldom being conscious of passage from one railroad to another. These trains disregard railroad 'fences,' the barriers, transfers, stopovers and connections, which have disturbed and delayed some of the ordinary traffic in the past. Cutting red tape and overriding physical obstacles, the military trains run for the greatest possible convenience of their passengers, for their quick, safe delivery in continuous, uninterrupted carriage. Speed and efficient transport, from starting place . . . through to destination . . . are the sole concerns of the carriers, who maintain separate jurisdictions, yet whose identities are welded into a single travel system for the Army and Navy. All the steel rails in the United States are an open road for the troop trains. They have the right-of-way and they have the passenger departments of all rail carriers working as a unit for their benefit. The smoothness and speed of handling these inter-carrier movements on a nationwide basis warms the hearts of the passenger experts.

"Today's experiences are weaving a pattern for tomorrow's use."

While inter-carrier service up to now consists largely of sleeping cars, owned by Pullman, there are promising possibilities in jointly-owned and operated equipment of other types, Goodsill said.

Railroads' 'Provincialism' Cited

"Standing less resolutely for their own fixed boundaries in late years, the railways have made many steps away from provincialism and local 'rights,' steps toward more consideration of the traveler, his comfort, convenience and pleasure. Probably more steps will be taken presently; indeed they must be taken, or the nosedive in railroad passenger business may be as abrupt as the one which followed World War I, when ticket revenues crashed from top of $1,304,815,000 to a lowest year's total of $329,816,000 . . .

"What the railroads did before to protect themselves was clearly not enough. The patient weakened under patchwork treatments. A carefully-prepared national plan seems necessary, in the interests of all-out catering to the American traveler, who may soon so freely choose between several delightful and easy forms of transport—open ways without barriers, by rail, highway, air or sea . . ."

Advertising 'Blue Book' Praises 3 Aviation Firms

Among the 69 outstanding newspaper advertising successes of 1942-43 described in the current "Blue Book", published by the Bureau of Advertising, American Newspaper Publishers Association, are three aviation industry campaigns: American Airlines' campaign "to increase public understanding of the air as the universal realm for transportation"; Eastern Air Lines' series "bringing together, both physically and mentally the airlines and the Army's air service of supply"; and Rohr Aircraft Corporation's campaign "to sustain employee morale and prevent absenteeism."

The "Blue Book" singled out for special praise American's "Air Map", and Eastern's "To the Army Air Forces" advertisement, which was reproduced in the Congressional Record. Campaigns reported in this book are not judged in a formal competition, but the inclusion of any campaign in the volume has long been recognized as a major index of advertising achievement.

Swedish Air Force Expands

Cost of expanding and maintaining Sweden's Air Force during the next fiscal year is set at $58,900,000 according to budgetary estimates released by the Swedish Information Bureau. Of this sum about $28,525,000 is allocated for materiel. Two new wings are to be organized and it is also planned to extend the Air Force transportation organization through the use of towed glider-planes.

Greenland Worth Thousand Pursuit Planes to U. S. A., Says W. Va. Congressman

The strategic value of Greenland in relation to the United States was cited by Rep. Jennings Randolph (D., W. Va.) last fortnight in an address before the American Bar Association in Chicago.

"We must be realists in looking at postwar Europe," said Randolph. "In our hands, Greenland is worth a thousand pursuit planes as a defense against any hostile European nation; if controlled by the enemy it is worth, to him, a thousand bombers. I believe, therefore, that we must make some type of agreement with postwar Denmark which will give us Greenland. It will not be long until we return to the Danes the freedom of their own country. Is it too much if we ask them to give us Greenland as an expression of gratitude, and as assurance that in the remote future we will again defend them against alien dominance? And why is not gratitude for lend-lease, and for the coming restoration of France, reason enough for us to be given all British and French possessions in our waters?"

Randolph introduced a resolution in the House of Representatives in 1940 directing the President to begin negotiations with Britain and France for the acquisition of their possessions off the Atlantic seaboard in partial payment for their debts from World War I. He did not mention Greenland in this resolution because in the Virgin Islands transactions the United States had specifically waived all claim to Greenland. However, he now feels that "the picture has changed."

'Helicopter Built For 2' Predicted as Song Title

The National Association of Manufacturers in a booklet entitled "Testimony to the Future" predicts that "the time may not be far distant when we will have a popular song about a helicopter built for two."

The association forecasts these developments in aviation:

1. High-speed gas turbines for commercial and cargo planes.

2. Steel propellers to displace rather than combine with aluminum for heavy commercial planes.

3. Use of new resins to stabilize soil for airports.

4. Widespread application of radar to peacetime navigation, particularly for piloting airplanes in fog.

5. Possibility of electric drive between gas-driven turbine and airplane propeller.

THIS new booklet, just off the press, is another contribution to Gulf Industrial Lubrication Engineering Service.

It tells of Gulf's new revolutionary cutting oils, scientifically developed to meet today's exacting machining problems.

In addition it contains valuable data on machine shop practice, including cutting speeds, tool settings, tables, etc. To get *your* copy of this useful booklet, just fill in and mail the coupon.

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Please send me a copy of the new revised booklet, "Gulf Cutting Oils," which includes a 40-page Machining Guide.

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British Study

(Continued from page 20)

through geographical fortuity, the U. S. have considered it wise to construct, during war, on Allied territory. It is to be hoped that the American airlines will give further consideration to this particular point.

Reports of the minority statement issued by Pan-American Airways, United Air Lines and American Export Air Lines speak of the fear that the 'global airlines after the war will be crowded with Government-dominated and Government-owned companies of other countries, notably the British Empire, thus making it difficult for the highly competitive U. S. airlines to operate profitably. They believe it would be in the United States' interests if America had one strong system operating in the entire field, or at least in specific zones, rather than have a number of American companies competing with each other and with strongly subsidized British, Dutch, French and Swedish lines.

"In the light of these fears the Joint Committee, which is broadly representative of British trade and industry (but excluding aircraft manufacturers and airline operators) and has no interest in these questions other than the development on a sound basis of strong, economical and efficient British air transport services, feels obligated to record that there has recently been a number of wholly independent pronouncements by important British organizations against the policy of national monopoly in international air transport. Further, on July 28 the Government assured the House of Commons that it had given to the U. S. Government no indication, formal or informal, that monopoly was to be the basis of British policy.

"In these circumstances it would create a most vicious circle if each nation were to propound a policy of monopoly on the erroneous assumption that that was, or would be, the policy of other countries.

"It becomes increasingly manifest that it is a matter of urgency for the Government to proceed on the basis of the Joint Committee's statement published on May 24 wherein it was urged that a unified British Empire policy should be adopted without delay, with subsequent early discussion with the United States of America and our other Allies. Since that date, over two months ago, no satisfactory evidence has been forthcoming that these negotiations are urgently in hand. The two statements by the American airlines show yet again the grave danger of the British Empire continuing to have no recognized policy."

British Aircraft Output Up

British aircraft production, in terms of structural weight, increased 44% for the second quarter of 1943 over the same period of 1942, according to an announcement by Capt. Oliver Lyttelton, Minister of Production.

"A particularly satisfactory feature is that our actual production during the first six months of the year has equaled planned production," Lyttleton said.

Redistribution of Surplus Plane Parts by 'Auction' Planned on National Basis

First nationwide extension of an "auction" plan for redistribution of surplus aircraft material which has been in use for some time on the West Coast is scheduled to be given a tryout this month.

All manufacturers have been requested to report to the Army Air Force Materiel Division, Wright Field, all idle surplus materials on hand, using ASU form No. 41. First reports are due Sept. 15, reporting stocks of idle materials as of Sept. 1. Thereafter, supplementary reports will be filed every 30 days.

Under this plan, Aircraft Scheduling Unit will be able to dip into idle stocks at the most strategic points and redistribute them where they are most needed. The local procurement district will continue to be the first source of supply. The Aircraft War Production Councils are urging their member companies to file their idle surplus material reports promptly on the 15th of each month.

Soldiers To Get Airmail

Letters to servicemen overseas soon will get speedier delivery through all-airmail service, according to Maj. Gen. Harold George, commanding officer of the Air Transport Command. Before the end of 1943, ATC will be carrying all the first class mail to and from every theatre of operations, he says. Currently the ATC is carrying about 50% of servicemen's mail, the rest going by boat.

Aero Chamber

(Continued from page 16)

It further recommended that the name, Aeronautical Chamber of Commerce of America Inc., be retained.

If the program as suggested is adopted, it will take a certain period of time to place in operation, the committee explained, urging that in the interim "the various departments of the Chamber be given a clear directive to continue their work with maximum effectiveness. This is considered particularly important as to the projects recently undertaken by the Economic Development Committee, especially those regarding contract termination, renegotiation and an allowance for proper reserves for reconversion to peacetime operations, all of which call for immediate concerted study and action."

Long-range projects which would be undertaken under the committee's plan include feeder line investigation, government regulation, air freight, personal aviation problems, and postwar development of aviation.

Answers

The following are the correct answers to the test on Page 20: 1. Dakar; 2. 6%; 3. Spitzbergen; 4. New Zealand; 5. 93%; 6. Venice; 7. 6%; 8. Santiago.

Termination

(Continued from page 25)

finished goods and machinery no longer needed because of termination. Procurement Regulation 15 requires that "so far as permitted by the terminated contract, property acquired for the performance of the contract is to be disposed of with reasonable dispatch. Property not disposed of is to be transferred to the Government."

"If these materials are not removed promptly, conversion to other work will be badly hampered and in some cases actually prevented," Teele points out. "In the draft of the uniform termination regulation there is a provision permitting the contractor to remove and store property at government expense if the government has not removed its property within 30 days of a request from the contractor."

Teele feels, however, that there may be difficulties in putting this provision into operation because of limited storage space in some areas. He said a WPB committee is at present studying national storage facilities to estimate their potential capacity in each area.

At this time both East and West Coast Aircraft War Production Councils have set up special panels to study contract termination regulations and to submit recommendations to procurement agencies. WPB officials anticipate the uniform termination article will be finished in about six weeks and Sen. Murray proposes to introduce his bill when Congress returns from recess. Termination clauses promise to be an important issue awaiting decision in Washington this fall.

N. Y. Aviation Writers Plan Luncheon Meetings

Members of the Aviation Writers Association in the New York City area will hold luncheon meetings on the second Wednesday of each month during the fall and winter, according to Russell Newcomb, AWA director for that area. Prominent leaders in the aviation field will be speakers. On the program committee are Rex Cleveland, *The New York Times;* Leslie Spencer, *Aero Digest;* Keith Ayling, Clint Macauley, Phil Andrews, *Air News;* and George Stromme, eastern representative of *Western Flying.*

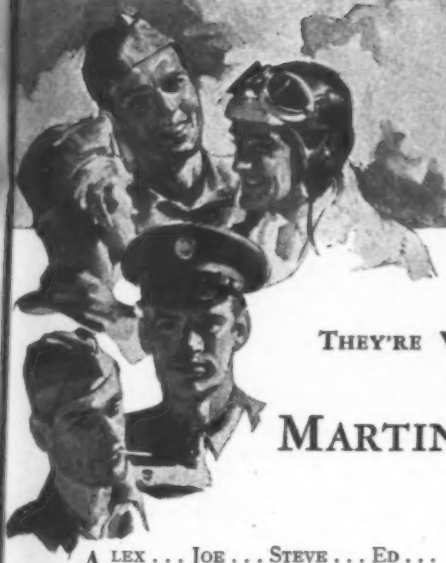
Churchill Plane Refitted

Prime Minister Winston Churchill's Liberator bomber, now on its fourth set of engines following flights from London to Russia; Turkey, Cairo, the conference at Casablanca, and the parley at Quebec, arrived at Tuscon, Ariz., September 5 to be refitted as a transport by Consolidated Vultee Aircraft Co. The plane contains eight seats, a lavatory, a hot plate, and two bunks located in a compartment above the bomb bay. It is lined with fibre board, Consolidated Vultee officials at Tuscon are reported to have said the plane will be returned to Churchill's service.

Macauley Leaves *Air Tech*

Clint Macauley has resigned as editor of *Air Tech* and is currently writing a book on helicopters.

ARMY'S B-26 MARAUDER



THEY'RE WRITING HEADLINES WITH A

MARTIN MARAUDER

BRITAIN'S BALTIMORE

ALEX . . . JOE . . . STEVE . . . ED . . . and BILL. You know them. Alex, who used to bring your groceries . . . Joe . . . Steve . . . Ed and Bill, who used to go with little Sally Miller. Likeable, quick-to-laugh young Americans. Give them the best aerial schooling in the world, put them in a rocket-fast, Martin B-26 Marauder, and they're a flyin', fightin' team that wins!

There's a reason for this, of course. Aircraft are highly complicated mechanical devices . . . and these boys were fitting together gadgets, tinkering with tools, racing old jalopies, when their adversaries were learning to "heil" and "banzai." They've got the feel of speed, the mechanical know-how that makes natural pilots, gunners and bombardiers.

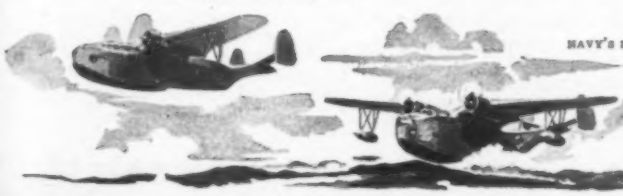
This same technical skill gives America fighting planes like the Martin B-26 Marauder. Sleek, graceful, packed with speed, power and punch, it's the kind of plane that makes young America's eyes light up . . . makes him say, "Put me down for the Air Force!"

What's more, American technical skill is going to play a major role in fashioning the future. Already Martin has designed giant airliners of 125 or more tons . . . mighty ships that will bring distant nations to within hours of your doorstep. At the same time, our Army and Navy airmen, imbued with the thrill of flight, the love of speed, are resolving never to be shackled to earth again. They're in the air . . . to stay!

Alex . . . Joe . . . Steve . . . Ed . . . and Bill.
They're doing more than win a war. They're building a world that will take your breath away.

THE GLENN L. MARTIN CO., BALTIMORE
THE GLENN L. MARTIN-NEBRASKA COMPANY—OMAHA

NAVY'S MARTIN TRANSPORT



NAVY'S MARINER PATROL BOMBER

Martin AIRCRAFT

Builders of Dependable Aircraft Since 1909

West Coast Manpower Program

(Continued from page 15)

balance," Byrnes' program explains. "The War Manpower Commission will be assigned the responsibility for directing and coordinating those phases of the West Coast Manpower Program concerned with the supply and distribution of labor."

The program provides further that WPB shall be responsible for directing and coordinating production programs in relation to the available labor supply, adjusting production schedules to military requirements as well as to the supply of manpower. With WMC, WPB will set up Area Production Urgency Committees on the West Coast composed of a representative of WPB, WMC, War and Navy Departments, Maritime Commission, War Food Administration, Aircraft Resources Control Office, and Office of Defense Transportation. The aircraft industry has been against this form of administration of the program from the beginning. They prefer to handle all negotiations possible on the top Washington level, labelling WMC's regional delegations of authority "cumbersome."

Multiplicity of Agencies

They are also expected to be disappointed in the idea of an area committee composed of representatives from each government agency since their experience has proved that manpower problems tend to become confused by the multiplicity of agencies involved. Their recommendations were that they deal directly with the military procurement agencies and that the Aircraft Production Board serve as claimant agency in dealing with the civilian branches of the government.

"Where adjustments in the military program become necessary, due to shortage of labor," the Byrnes' report states, "after full effort to increase the available supply, the Committee will submit recommendations for adjustments to the Chairman of the Production Executive Committee of WPB for action."

The duties of the chairman of each Production Urgency Committee, who is appointed by the Chairman of WPB, are to determine the area production programs which are feasible and their relative urgency, to inform WMC of approved production schedules and requirements, review proposals for facilities and major supply contracts in the area, recommend to WPB the need for adjustment of civilian production and develop a program for balancing labor supply and requirements by redistributing production.

Committee Formed

A complementary committee was also established for Manpower Priorities, consisting of representatives of the same government agencies plus Selective Service and the Committee for Congested Production Areas. Chairman of the Manmittee will be selected by the area Management-Labor Committee and appointed by WMC Chairman McNutt. It will be responsible for recommending to the Area Manpower Director manpower priorities and allocations on the basis of urgencies of essential production and services, list establishments and services in the area according to their urgency and need for labor; and fix employment ceilings for individual plants, services and activities.

Three categories will be established for these plants and services: Class I, those which may expand employment to established ceilings; Class II, those which may maintain employment at an established ceiling through continued hiring as necessary; and Class III, those which may not hire and from which workers will be drawn by issuing releases and by direct recruitment by WMC.

WMC will establish standards for the Manpower Priorities Committee to use in translating production urgencies into manpower priorities. WMC will integrate the action of the area committees through the existing management-labor committee organization.

In these essentials and those that follow, the plan echos almost word for word WMC's proposals. On the balance of production and manpower requirements, the report advises that future expansion in requirements for manpower on the West Coast will be avoided insofar as possible. Proposals for new facilities and supply contracts which involve increases in employment must be accompanied by proposals for reduction of other contracts and screened by the Production Urgency Committees. These committees will aid WMC in effectively utilizing released labor promptly.

3 Methods of Curtailment

Production will be removed from or curtailed on the West Coast in three ways: whenever there is a reduction in overall production of any item; when there is capacity to meet requirements elsewhere: and whenever subcontracting can be effectively moved out of the area. On recommendations by the area committees, WPB may adjust civilian production and services to make labor available to essential production and at the same time WMC will place all released workers in high priority jobs.

No cognizance is taken of the industry suggestion that there be strict mandatory compliance with the availability certificate system, that the appeal committee procedure be more stringent, shutting off the process of granting certificates against the advice of employers and that violators be strictly prosecuted. The industry is believed to be against the controlled referral plan because they say neither WMC nor USES has the facilities to administer it and because they believe it dries up the labor supply by limiting the employe's choice of occupation.

Direct draft deferment requested by the aircraft industry has been circumvented in the program, since such a drastic move would require Presidential authorization. "Selective Service withdrawals from rated establishments will be related," it states, "to employment ceilings and replacement possibilities with adequate consideration for the deferment of key workers." This will be done by the requirement of replacement summaries from all Class I and II companies, and by the use of replacement schedules to aid Selective Service in regulating withdrawals from high priority plants. Further, "Registrants in critical occupations will receive full consideration for deferment if they are working in high priority establishments."

The action taken in this respect falls far short of that recommended by the industry and promised to them by Wilson and Patterson. They advocated the preparation of a "necessary" occupation list to be used as the basis of deferment for a six month period. This list would include key or essential men and "necessary" men of lesser skills who are irreplacable in sufficient time and in sufficient quantity. The industry also asked that Selective Service insure there would be no mass induction at the end of the six month period. It is reported that officials of the Army Service Forces even promised six-months blanket deferment of everyone now employed in West Coast airframe plants.

40,000 Key Personnel

West Coast aircraft spokesmen believe that if the prime contractors can hold 80% of their draft vulnerable employes, it will mean 40,000 men, which compose, with fathers in essential occupations, the bulk of their key personnel. Draft deferment, they believe, will greatly reduce turnover in this group, also.

The WMC and WPB reports included one important factor omitted from the Byrnes program, providing authority for recommendations to the War Labor Board of the necessity for wage increases or adjustments. They proposed that this be done wherever it would remove barriers to recruitment and employment stabilization.

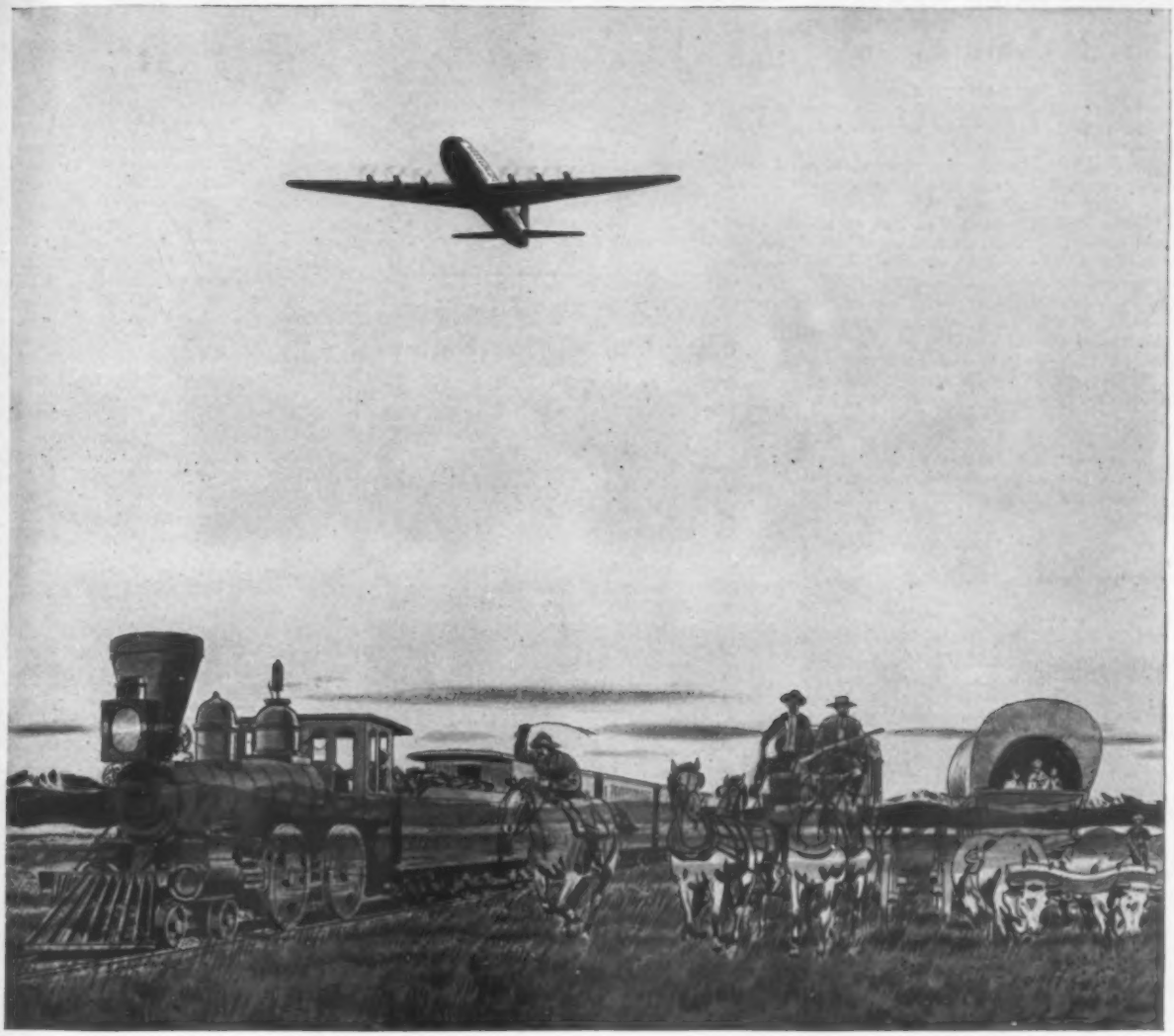
One feature which all government and industry plans shared in common was the desire for an intensive campaign of manpower utilization. Industry recommended cooperation by foremen in adjusting less capable employes and an effort to sell the job to employes through relaxation of Army rules on production goals and plane performances. They obtained Wilson's approval of an experiment with a ten-hour, two-shift, five-day week, which would be designed to increase recruiting, decrease absenteeism and turnover from fatigue and increase utilization of new personnel by providing more supervision.

Byrnes Borrows WMC Plan

But the solution recommended by Byrnes goes very little beyond an intensification of WMC's present utilization program. Consultants will go into plants to effect improved utilization of skills through job analysis, transfer, upgrading and labor productivity, improved personnel policies and eliminating in-plant causes for turnover, absenteeism and labor hoarding.

OWI will collaborate by press and radio to recruit additional workers within the area, transferring them from less essential work, recruiting women and part-time workers, especially by arranging high school schedules to enable students to work. "When necessary," the report states, "and under appropriate standards

(Turn to page 36)



New York to California in the *Age of Flight*

Today in a nation fighting for its very existence, we are placing much of the burden of war on the airplane. What can we expect of it in a world of peace?

• • •

SOME DAY *you* will fly across this great country of ours. Then you will feel as never before the drama of its past . . . the greatness of its future.

Chances are you will choose the *direct* route . . . the Main Line Airway. In the space of a few hours, beneath your giant United Mainliner will spread out the whole vast panorama of this continent — its great industrial centers, its thousands of towns and hamlets, its rolling farmlands and rich cattle regions, its stately forests and fertile plains.

History itself will unfold before your eyes, for the Main Line Airway is the path of the pioneers. Over this Overland Route trudged the covered wagon, traveling only as far in a whole day as you will go in three minutes. You will trace the course of the Pony Express, the first transcontinental railroad and telegraph line, the first coast-to-coast highway. You will fly over the route selected by Government engineers for the first air mail service across the country.

Today, as then, the direct route is the *strategic* route over which flows a nation's commerce. Today, in Victory's cause, United is maintaining important scheduled passenger, mail and express service on the Main Line Airway and is also flying to every corner of this land and beyond its shores on military missions.

When peace is finally won, all of United's hundreds of millions of miles of flying experience will be devoted to the realization of the Age of Flight.

★ *Buy War Bonds and Stamps for Victory* ★

UNITED
AIR LINES
THE MAIN LINE AIRWAY

Midwest's Position In Air Picture Called 'Strategic'

Claiming that the midwest holds a place of strategic importance in the future of aviation, Lowell H. Swenson, president of the Greater Twin Cities chapter, National Aeronautics Association, urged establishment of an NAA organization along regional lines in a recent statement sent to aviation and civic groups in that area.

Swenson stated that a midwest organization, by bringing state aeronautic administrators into the plan, could modernize state aviation laws, codify and unify them and generally give assistance to the expansion of air commerce.

Because the region has no great harbors for ocean travel and because its great lakes are land-locked with respect to the larger ocean going vessels, Swenson recommends that this section of the country take steps now to insure the area a definite place on the new air trade routes which are expected to develop in the postwar era.

Manpower

(Continued from page 34)

facilitate the importation of foreign labor, use of prisoners of war, and use of troops."

This last semi-promise will come as a disappointment to the industry which had been assured the return of skilled workers in the armed forces by War Department officials. It is believed they were preparing lists of men whom they wished to have returned.

Finally it is stated: "to avoid the unnecessary reduction of essential work contracted for the West Coast, if improved production per worker and the recruitment of additional workers locally do not close the gap in need for workers, WMC will recruit additional workers from outside the area in accordance with established WMC standards and procedures."

Permission has already been given to Boeing to recruit 5,000 men in Minnesota and other sections of the Midwest. But the industry does not believe this can be effective, from its experience in recruiting for plants in the Los Angeles and San Diego area, until housing, transportation and community facilities are improved.

The Byrnes program has attempted to take care of this objection by ordering OWI and WMC to conduct an informational campaign urging communities to cooperate and by appointing the President's Committee for Congested Production Areas to coordinate all state and Federal activities relating to improvement of facilities and services.

The chief problems, as insiders see them, are the necessities of reducing manpower turnover, obtaining replacements and devising an appropriate plan for the deferment of key personnel. The Byrnes program, designed to accomplish these ends, is seen as the last possible extenuation of War Manpower's "voluntary" labor plan.

But in one aspect it fails seriously to meet the problem as it appears on the West Coast. Instead of concentrating authority, it divides it among the many regional and national agencies concerned. Failing to eliminate the "cumbersomeness" of the present system, it only serves to emphasize it.

Sock's Wit

Justin Bowersock, aviation editor of *The Kansas City Star*, made the crack of the decade in his story reporting the first annual Midwest Global Aviation Conference held at St. Paul, Minn., last month. "Global was the proper title for the conference because everyone was going around in circles looking for the answers," he wrote.

278,875 Copies of Convair Map Booklet Distributed

Consolidated Vultee Aircraft Corp., up to Aug. 10, had received requests for 278,875 copies of its booklet entitled, "Maps and How to Understand Them,"—study in global geography made desirable by the airplane's contraction of world distances.

The requests, it was said, have been coming from a wide variety of sources, ranging from private individuals to school systems. Teachers of navigation in the various Army and Navy programs, civil aviation pilot training groups, aviation training commands, and military intelligence are among those who have shown an interest in the booklet. Consolidated is now preparing a teachers' aid or syllabus consisting of a dozen lessons based on the text of the book. These lessons will probably find their way to geography classes in many elementary and high schools throughout the country.

In offering this map to the public, Consolidated said: "'Maps—and How to Understand Them' does not pretend to be an exhaustive study of global geography. It simply points out certain fallacies in our geographical thinking in the past, emphasizes important geographical truths which have a bearing on our survival as a peace-loving nation, and seeks to dramatize the fact that today's swift, long-range planes have knit the nations of the world into one closely-related Family of Nations —for better or for worse."

The booklet lists and illustrates the various types of projections and supplies an explanation of each method. They include: Azimuthal Equidistant projection, Orthographic projection, Conic projection, Mercator projection, Stereographic projection, Bi-Polar-Conic-Conformal projection, the Gnomonic chart and Interrupted map.

Richard Edes Harrison, cartographer, J. McA. Smiley and Henry B. Lent collaborated in preparing the booklet.

Minnesota U. Gets Ready To Enlarge Its Airport

The University of Minnesota, one of the few colleges of the country to have its own airport, has recently made a survey showing the possibilities for expanding the port so as to accommodate larger types of passenger and commercial ships. The airport was developed originally in connection with courses in aeronautical engineering taught at the university.

At present 40 aircraft are based at the port, 26 of which are privately owned and 14 of which are owned by the Defense Plant Corporation. The latter planes are used in the training of Army Air cadets. Ten of the 26 privately owned planes are listed for service with the Civil Air Patrol. The port is also being used for Civilian Pilot Training, both in the primary and secondary stages.

Runways at the airport have been completed for the eight cardinal directions, and the recent survey points out that there is sufficient land adjacent to the port to extend all runways to 4,500 to 5,200 feet.

New Power Industrial Truck in Action

Only two men are required to raise or lower a half-ton of freight through use of the power industrial truck illustrated above. The truck has been developed by the Elwell-Parker Electric Co., Cleveland, O. Plane in illustration is a Douglas C-54.

Veterans of *Every* Battlesky

No other American-built fighters have fought so many battles, have downed so many enemy planes—over mountain, jungle, desert and sea—from the bleak Arctic to the blistering tropics—as have the Curtiss pursuits, veterans of the battleskies of World War II.

CURTISS-WRIGHT
Corporation
AIRPLANE DIVISION
BUFFALO • COLUMBUS • ST. LOUIS • LOUISVILLE

Member: Aircraft War Production Council, Fast Coast, Inc.

FIRST
Since The Birth of Aviation

CURTISS WARHAWK
LATEST OF A LINE OF FIGHTING HAWKS

It's Okay, Mom

We have this to say...to a lady whose boy has gone to war. All of us here in America want our fighting men to come back.

To help bring them safely home, we're giving them the best equipment we can produce. The finest of food, clothing, medicine, guns, tanks, planes.

That's why planes like the U. S. Army Bell Airacobra are designed with stout armorplate protecting the pilot...

With self sealing gas tanks...

With bullet-resistant "armor glass"...

With a 37 mm. cannon in the nose. (After all, an explosive cannon shell hurtling at the enemy is a pretty good protective device!)

These and all the other safety features built into American planes add weight, make design problems tougher. But they'll bring safely home many an American boy who might not have come home without them.

WHEN they come home, they'll want planes of peace. There'll be another era of aircraft pioneering—this time to make planes still safer, simpler, more useful, more economical. You'll see then how an aircraft manufacturer could pack decades of aviation progress into a few short years of war. © Bell Aircraft Corporation, Buffalo and Niagara Falls, New York.

BELL *Aircraft*

AIRACOBRAS for victory—future planes for peace

CAB Shapes Procedure to Hear Over 300 Route Applications

EVENTS AND CIRCUMSTANCES appear to be gradually shaping a form of procedure which the Civil Aeronautics Board may follow with reference to disposing of the more than 300 new route and amended applications now on file.

The applications, due to their character, naturally fall into several categories, and certain groupings, for hearing purposes, appear inevitable.

CAB's recent action in asking the industry for its opinion as to what international air transport routes appear likely to be especially important to the United States in the post war period, indicates that the Board will defer action on this type of application until studies have been completed and the recommendations considered. Only two weeks ago Board Chairman L. Welch Pogue, in a radio address, indicated the Board would not necessarily wait until the end of the war to hear these applications involving foreign routes. Pogue said they would be heard as soon as the war exigencies would permit, which he said did not necessarily mean waiting until the end of the war.

With hearings on foreign routes thus awaiting war developments and the report of the special study, the Board can give a large measure of its attention to the applications for domestic routes.

Relatively simple will be the disposition of those applications which seek to add stops on existing routes. There are a number of these applications on file, several of them without announced opposition from other air companies. Prehearing dates have been set for some of them.

Consolidation of many applications involving requests of both old line and newly established companies for new routes or amended routes seems certain based on the Board's recent action in similar cases. The hearings which involved the New York-Boston applications is a case in point. Possibly indicative of the Board's future policy is its decision to hold up its opinion in the applications serving routes to the west from Boston until the issues in the New York-Boston applications have become settled.

Some CAB officials also believe that there may be a further tendency to regionalize applications for domestic routes if the same general terminal points are involved. As an example, it was suggested the Board might regionalize all applications involving routes from Denver to the west coast. Similarly the Board might well follow other groupings where applications have a tendency to cover more or less fixed areas of the country. Whether the hearings would be held in the area or in Washington has not yet been decided. The Board does not now have sufficient funds to hold hearings in various parts of the country near the sources where these applications originate. The fact that the New York-Boston cases were heard in New York is not therefore indicative of the future policy with reference to the place the hearings will be held.

CAB experts already are at work in connection with the investigation of so-called Feeder-Pick-up applications. This work is progressing favorably and hearings may be held on these applications early in the year.

Because a large majority of these applications have been filed recently, it is assumed that the Board will not act on them until some of the other older cases are out of the way. In the meantime, Congress may act to help clarify just what the Board's attitude should be toward applications submitted by other forms of transportation, such as truck and bus companies, railroads and steamship lines.

While it is true that the Board has always held that it was the intent of Congress, in writing the Civil Aeronautics Act, to prevent domination of air carriers by other forms of transportation, the second proviso of section 408(b) does require the Board to disapprove any such transaction when a surface carrier is involved unless such transaction will promote the public interest by enabling a surface carrier to use aircraft to public advantage in its operation and will not restrain competition. This proviso then makes it incumbent upon the Board to hear applications of surface carriers to determine whether they are in the public interest.

There were 303 applications on file in the Docket section of CAB on Sept. 8th. This number included 29 grandfather non-scheduled applications, 25 pick-up amended applications, 10 Alaska applications and four for foreign permits.

Robert Bias, Assistant To Pogue, Joins Lockheed Firm

Robert B. Bias, executive assistant to Chairman L. Welch Pogue of the Civil Aeronautics Board, has resigned to accept a position with Lockheed Aircraft Corporation and will be assigned to its Washington office. He has been succeeded by J. Francis Reilly, CAB examiner.

After practicing law three years following his graduation from the University of California Law School, Bias, in October of 1941, entered the CAB general counsel's office. He became executive assistant to the chairman in September of 1942.

Bias is to begin his new duties in Washington about Oct. 1, after spending some time in the company's plant in Burbank, Cal.

Reilly came with CAB Aug. 1, 1940, after being an assistant corporation counsel for the District of Columbia.

MID-CONTINENT AIRLINES reports gross revenue for July of $84,414 compared to $80,388 for June. Revenue passenger miles in July totaled 803,173 compared to 739,853 in June and mail pound miles amounted to 20,030,322 compared with 18,862,522 in June. Express pound miles were 3,289,427 against 3,174,742.

CAB Men Fly Air Mail Pick-Up Run

To obtain first-hand knowledge of the air mail pick-up operations of All American Aviation, Inc., CAB Examiners William J. Madden and Albert F. Beitel, accompanied by C. Edward Leasure, chief of CAB's Examining Division, went to Pittsburgh recently to inspect the company's operations and maintenance and to ride on scheduled pick-up flights. Madden and Beitel will conduct a CAB investigation of air pick-up, local, and feeder service, ordered as a result of the universal demand for direct air service. Above photo, taken at All American's Pittsburgh base, shows, left to right—Madden; Leasure; Halsey R. Bazley, president of All American; Beitel; Pilot David Patterson; and Harry R. Stringer, vice president of the company.

CAA Studies an 'Ideal' Airport Design

AN AIRPORT DESIGN featuring a central operations base, with runways arranged about it in such a manner that no aircraft actually in motion will ever cross the path of another, has been described as "ideal from the airport traffic control viewpoint" by the Air Traffic Control Division of CAA's Office of Federal Airways.

The design, submitted by Hans J. Lubig, of CAA's Airways Engineering Division, is discussed in a paper prepared by the Air Traffic Control Division entitled "Study of Airport Design in Relation to Airport Traffic Control." The study, which was prepared several months ago, a copy of which has just been obtained by *American Aviation*, contends that Lubig's design "offers the highest efficiency in airport traffic control operation."

"The flow of traffic is simple and direct, and the taxi distances are short," it states. "It is the only design thus far proposed which meets all the requirements of airport traffic control set forth in our requirements for an ideal airport." (See Column 2.)

American Aviation has obtained from Lubig the complete story of his airport plans. The story follows:

"The conventional single-runway airport has a maximum capacity of from 40 to 50 aircraft movements per hour. This number can be handled, however, only under the most favorable conditions. Unfavorable weather conditions and other unforeseen factors will reduce the airport's capacity, causing scheduled aircraft to be seriously delayed.

"It is extremely important to consider carefully the estimated rate of increase in aircraft operations for the next several years in order to determine whether or not our present day landing facilities will be adequate. If the predicted annual increase of 30% during the next six years materializes, it will be necessary for principal air terminals to have a maximum capacity of from 140 to 150 aircraft movements per hour during the *rush* hours.

"The single-runway system is the one most commonly used on present day airports. At least three of these airports would be needed to accommodate the estimated hourly 140 to 150 aircraft movements.

"If several airports are to be used in one city, the resulting situation would parallel the existence of several railroad terminals in one community. However, the inconvenience of a multi-airport system would be greater principally because the airports might be located at great distances from each other. Railroad terminals are usually more accessible. The most unfavorable factor is the expense involved. This solution for handling future airport traffic would be very costly for the following reasons:

"1. Additional airports would have to be built.

"2. A transportation service between the several airports would have to be provided for the passengers, mail, and freight.

"In addition to the expense factor, airlines, who are at present trying to compete with railroads, might be unwilling to assume the cost of building and maintaining a shuttle service between airports.

"For the argument that bad weather conditions over and about the air terminal may necessitate the provision of additional airports, the suggestion is made to have one of the various airports used for private flying enlarged for emergency landings of scheduled aircraft.

"Some airport operators, realizing the inadequacy of their facilities, have sought to improve them by adding parallel runways to the already established ones. The Chicago Municipal Airport has made this improvement. The installation of a dual-runway system enables the airport operator to separate landings from takeoffs, thereby increasing the capacity of the airport by approximately 100%. This system, however, can be installed only if the airport is not handicapped by fixed boundaries or obstructions which cannot be eliminated.

"In most cases, reconstructed airports have the problem of landing, taking-off, and taxiing aircraft crossing each other's paths, thus decreasing the much desired safety, which becomes even more necessary in increased traffic. Even if the utmost care were taken and the taxiing aircraft were directed to the operations base or the take-off point by way of the airport boundary, the taxiing aircraft would

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'Ideal' Airport

The Air Traffic Control Division has listed the following requirements for an ideal airport from an airport traffic control viewpoint:

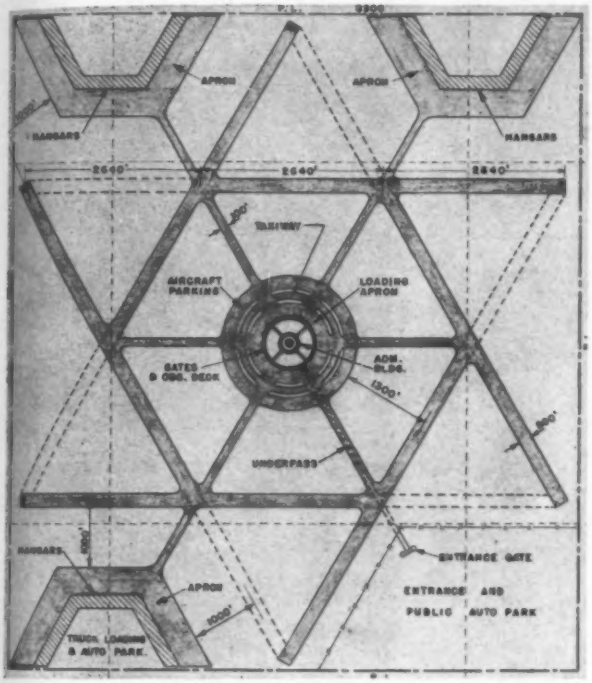
1. Landings, take-offs, and taxiing should be accomplished independently and without possible interference between aircraft performing these different functions.
2. Taxiing distances should be short for both landings and take-offs during all wind conditions.
3. The control tower should provide an unobstructed view of all runways, taxi ways, the loading ramp, and approaches.
4. There should be no congestion at the loading ramp, the arrangement of which should be such that arriving and departing aircraft can move freely and without interference to each other.
5. The airport should be designed in a manner allowing for progressive expansion to meet future needs and still provide the features provided for in Points 1 to 4, inclusive.
6. The runways should be of uniform length although this is not essential if the shortest runway is adequate for all types of aircraft operation. One of the disrupting factors of present day operation is the fact that many airports have non-uniform length runways with the shortest runway being unsuitable for operation of heavy aircraft. When the wind conditions favor this short runway, the pilots cannot land with other traffic on the short runways; in such cases, traffic must be temporarily interrupted to permit the heavy aircraft to land cross-wind on a more suitable runway.
7. At least 1,000 feet separation between runways to permit simultaneous instrument approaches; more space is desirable.
8. All obstructions should be at least 1,000 feet from the runways. This will include aircraft parking spaces, loading ramps, and buildings.
9. There should be sufficient loading ramp space to accommodate all scheduled and special air carried flights, and sufficient parking space to accommodate all other aircraft.

Artist's conception of Lubig's "Master" Airport—night and day.

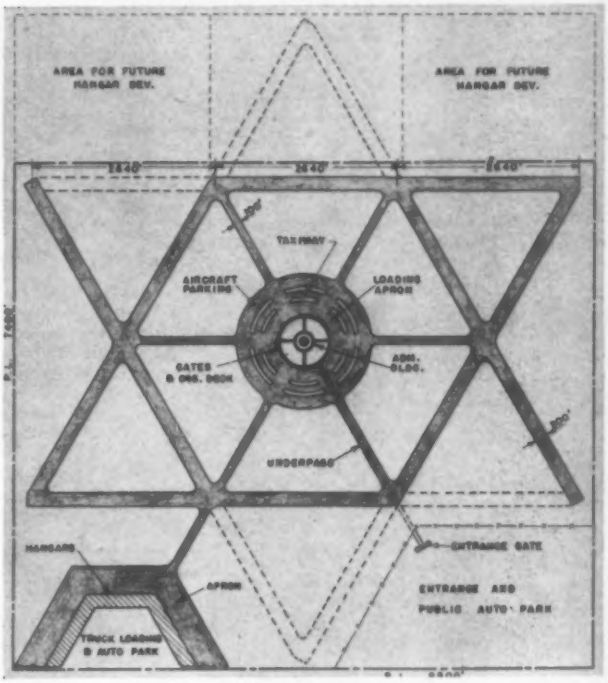
A Master Plan and Three Alternates

HERE ARE FOUR of Hans J. Lubig's latest airport designs. Drawing in upper left is Lubig's de luxe layout, with underpass. Some facts about this plan, which has been termed 'ideal' by the Air Traffic Control Division of CAA's Office of Federal Airways, follow:

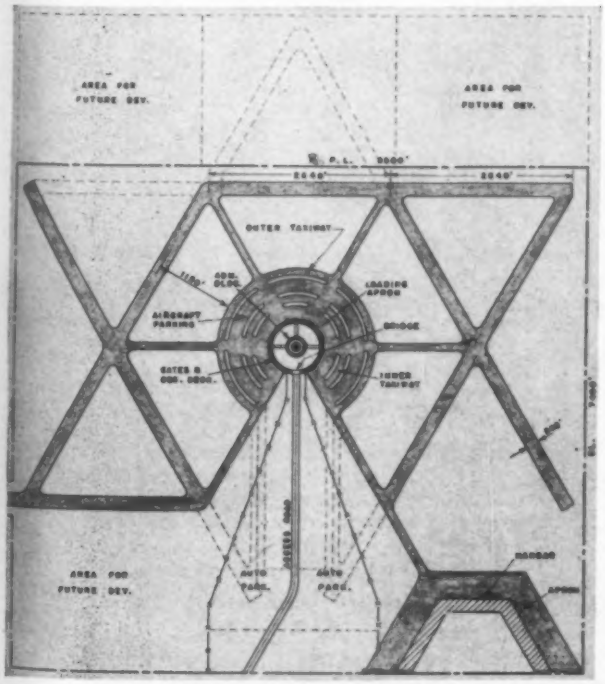
CONSTRUCTION DATA: (1) All runways 1 mile long; (2) Any or all runways may be extended to 1½ miles within initial area; (3) Maximum initial area required—1,870 acres; (4) Minimum initial area required—1,620 acres; (5) Initial hangar area—approximately 100 acres; (6) Final hangar and cargo loading areas in 3 corners of airport—approximately 300 acres; (7) Entrance and public auto park—approximately 160 acres. OPERATIONS DATA (1) Maximum operations per hour—70 landings and 70 takeoffs; (2) 26 passenger loading spaces (DC3 type); (3) 33 aircraft parking spaces (DC3 type) on outer ring of center area; (4) Aircraft accommodations in 1 hangar—approximately 50 spaces (DC3 type); (5) Aircraft accommodations in 3 hangars—approximately 150 spaces (DC3 type); (6) Indeterminable number of parking spaces on hangar aprons; (7) Capacity of public auto park—approximately 30,000 cars.



Master Plan



Alternate No.1



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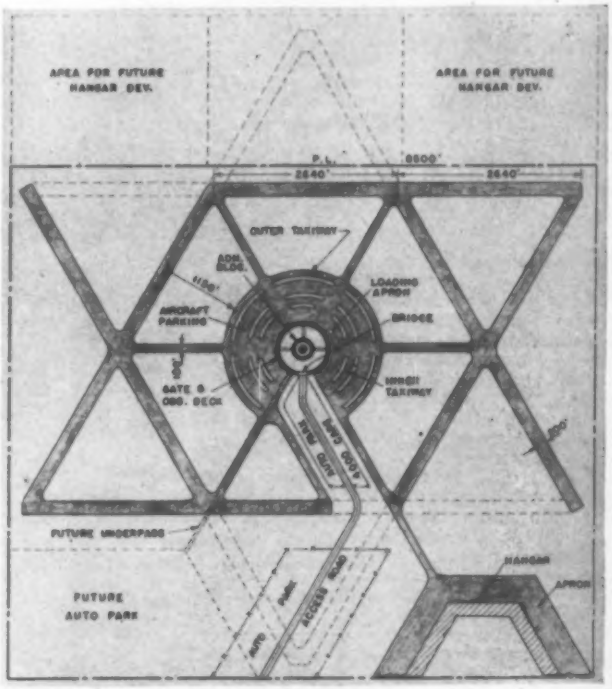


Alternate No.3

'Ideal' Airport Design

(Continued from page 38)

still constitute an obstruction and hazard to otherwise operating aircraft. It should also be noted that it would take considerably more time and a longer distance for taxiing aircraft to reach their destinations on the airport.

"The hazard to operating aircraft could be avoided, of course, by rules which would prevent taxiing aircraft from crossing the path of any incoming or outgoing aircraft angular to their own direction. However, this can be successfully accomplished only at the expense of time, which is also very valuable in terms of safety.

"It will be argued that traffic congestion could be overcome easily by directing all landing aircraft to the runway farthest removed from the operations base, thus leaving the near runway for take-offs only. This may, in some cases, help insofar as it will eliminate the waiting of taxiing aircraft for landing aircraft to cross their paths. It will not, however, solve the problem of the landing aircraft and their taxiing to the base.

"Congestion at the operations base is another vital factor to be considered. Aircraft need to be serviced and unloaded, and also reloaded if departing. Other aircraft may be waiting for space, and general congestion at the loading platform may exist. Various other complications may occur if the operations base is too close to the hangars.

"For example, an aircraft which lands on the north side of the field, intending to taxi directly to a hangar on the south of the operations base, will have to pass the loading platform, thereby interfering with routine operations. This same condition will occur if an aircraft has to taxi to the opposite side of the loading platform for a take-off. When aircraft are warming up their motors, activity surrounding the administration building will be disturbed by the noise and dust from revolving propellers.

"It will be noted that it is also important to allow for expansion at the operations base in case air transportation demands it.

"With the completion of a well-designed conventional parallel-runway system, there is very little to worry about for several years. If the airport needs expansion, however, the carefully planned parallel-runway system will be thrown out of gear. Taxi strips designed so that their ends coincide with the ends of runways may need extensions. This means (in terms of operating aircraft) that the taxiing aircraft will have to obey not only the rules already mentioned, but will also have to use the extension of the runway for a taxi strip and then make a complete turn in order to be ready for take-off. Obviously, this will delay ground operations even more. The average taxi distance on a field about one mile square would be from 1,500 to 9,300 feet, depending on the wind direction.

"Assuming that the newly installed parallel-runway system is sufficient for even a 200% increase (90 aircraft per peak hour) over present day traffic (30 aircraft per peak hour)—so far as landings and takeoffs are concerned—how will it affect ground traffic or taxiing of aircraft? With a 200% increase in operations, a point will have been reached where the factor of taxiing aircraft to and from the operations base of the airport is not incidental to otherwise operating aircraft. Taxiing will by that time have become as important a factor to safety as all the precautionary measures taken in securing safe landings and take-offs. When poor visibility, gusty winds, bad judgment, or blind spots are added to the condition described, the possibility of a major accident is evident.

"Considering the amount of traffic during certain periods of the day, it may well cause a great deal of confusion in traffic control to have several aircraft waiting at certain intersections for several other aircraft to complete their landings. If this rule of delaying taxiing aircraft during rush hours were to be enforced, it would undoubtedly mean a delay of from two to three minutes for each aircraft. When this delay is accumulated over a period of possibly one or two rush hours, the last aircraft will be delayed considerably.

"The taxi distances will also concern the aircraft operators, particularly if their pilots will have to travel along the boundary of the field to their destinations—a distance of possibly 9,300 feet. Extensive taxiing is costly.

"The problem of handling traffic at major air terminals will become an extremely important one so far as municipalities are concerned. From an economical point of view alone, it is advisable to weigh carefully the cost of future expansion of the present airport or a multiple-airport system against the purchase of a new tract of land which will accommodate an airport designed to serve its purpose to the community and the nation for many years.

"In the future, the establishment of an operations base on or near the boundary of the air terminal will constitute a decided disadvantage. A central operations base, however, will not solve most of the problems unless the dual runways are layed out so that:

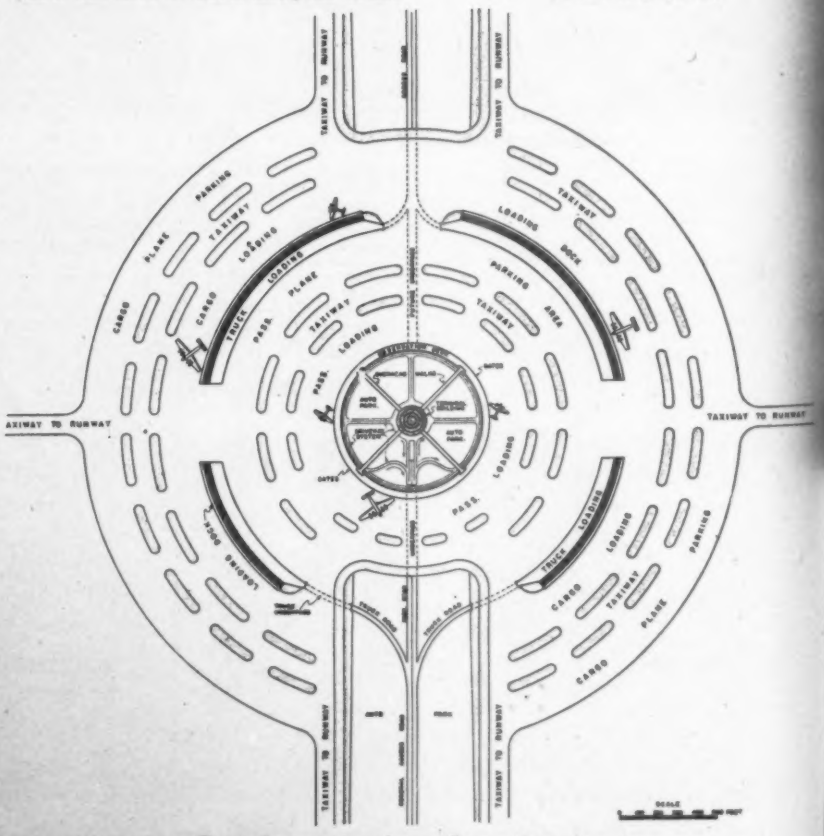
"1. The approach ends of all runways are 'dead ends', identified by numbers.

"2. The points for takeoffs are all placed in intersections.

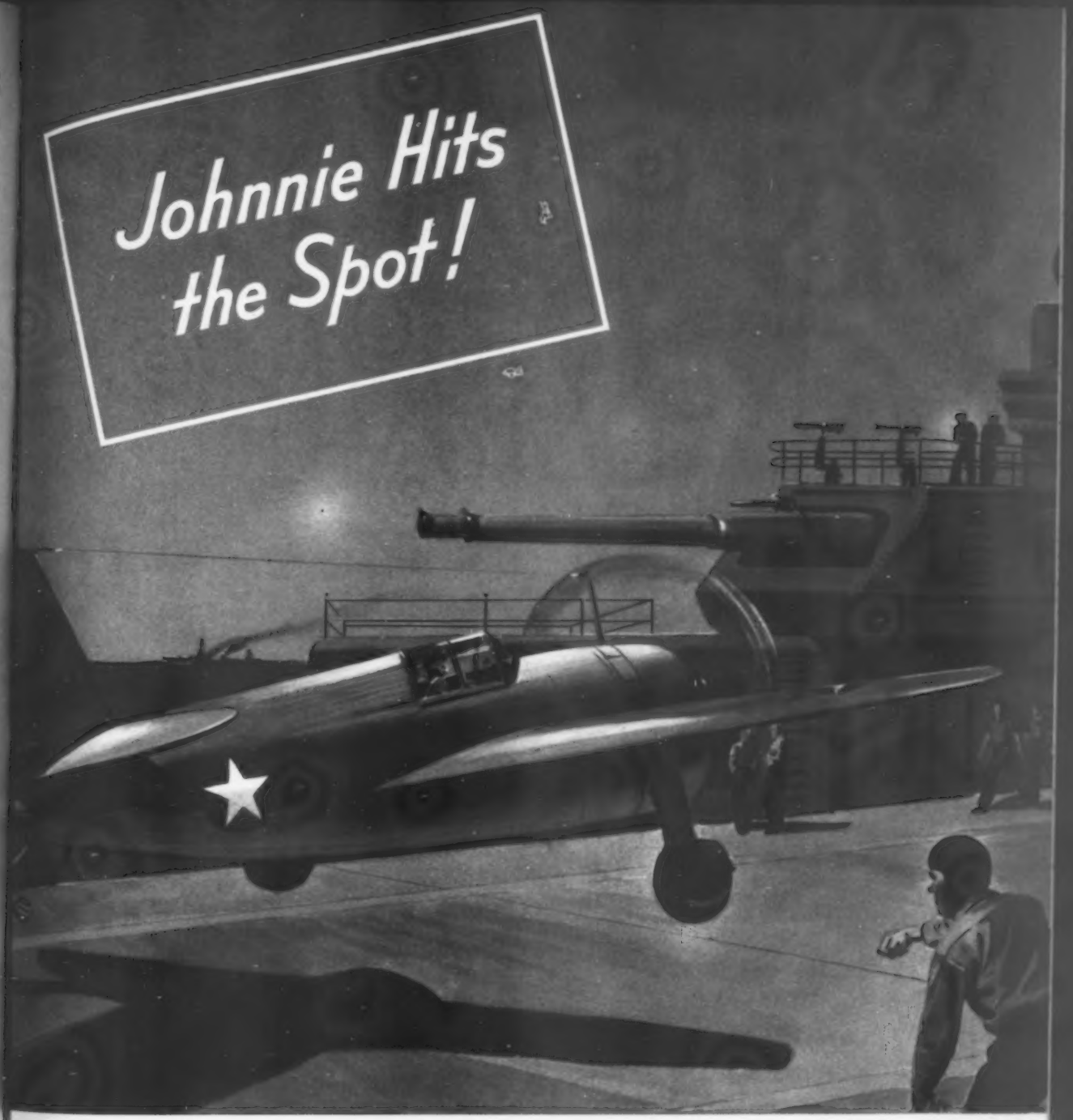
"The central operations base is connected with four intersecting points of the runways by taxi strips approximately 700 feet (depending on the diameter of the operations base) from the edge of the center base apron to the edge of the nearest runway intersection. Out of 16 possible taxi distances (eight for takeoffs and eight for landings) only four exceed the length of the taxi strips (700 feet) by 1,600 feet.

"The paving ratio of runways to taxi strips is about *one to four per cent* (depending on the size of the center base apron) as compared with the Chicago

(Turn to page 64)



Central operations base of new-type airport.



Whether it's a spot landing on a flat-top's pitching platform—or a spot-shot at a warship of the Slinking Sun, American skills combine to complete the mission. And Johnnie hits the spot with nice precision. Success becomes almost commonplace when repetition dulls the edge of novelty. But the wonder of it grows when one considers what American aviation has accomplished in the brief period since Pearl Harbor. Johnnie Tojo also hit a spot that December day—a tender spot that annoyed America into building the greatest Air Force in the World.

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DIVISION BORG-WARNER, CLEVELAND, OHIO

CAB Renders Important Ruling on Control Powers in NEA Case

WHILE EMPHASIZING that Congress, in writing and passing the Civil Aeronautics Act, clearly intended that various forms of transportation should be mutually independent, the Civil Aeronautics Board, in its recent decision in the Boston and Maine Railroad and Maine Central Railroad company case with respect to their interest in Northeast Airlines, Inc. has held that the act is not retroactive, hence it does not have jurisdiction because the railroad companies had acquired control prior to the effective date of the Act.

The Board held that the railroads do now control the airline company but that the degree of control has not increased since August, 1938, the effective date of the Act.

Since entering this opinion, Northeast filed a motion asking the Board to reconsider its decision and find that the railroads do not now control the airline company. The Board denied the motion.

Boston and Maine and Maine Central decided in 1931 to engage in limited air service during summer months and organized Boston-Maine Airways Inc. It entered an agreement with Pan American Airways to furnish this service between Boston and Bangor during two summer months of 1931 at a flat rate per airplane mile. No service was operated during the summer of 1932. In 1933 a contract to perform service in the name of Boston-Maine Airways was entered into with National Airways, Inc., owned by Paul F. Collins, Samuel J. Solomon and Amelia Earhart. The two railroads agreed to share any deficit incurred by Northeast under this contract. In December, 1938, National Airways entered into an agreement with Central Vermont Airways (a wholly-owned subsidiary of Central Vermont Railway, Inc.) to furnish service to White River Junction.

Meanwhile, Boston and Maine and Maine Central, to effect mutual operating economies, entered into an agreement establishing joint officers, but maintaining the independence of each railroad. This contract, which is still in effect, provided for a termination without cause by either party upon 90 days' notice.

On March 1, 1937 Boston-Maine Airways purchased all of the assets of National Airways and operated the service on its own account. On the same date. Boston and Maine, Maine Central, Boston-Maine Airways and Central Vermont entered into an agreement relating to service by Boston-Maine Airways between Boston and Burlington, Vt. with the privilege of extending the operation to Montreal. The former two railroads agreed to transfer to Central Vermont enough of their stock to constitute 1-6 of the entire stock of Boston-Maine Airways, then issued and outstanding. The stock was held in escrow with the power remaining in Boston and Maine and Maine Central to vote it until fully paid for by Central Vermont, which was done in January, 1940. Central Vermont also agreed to pay 1-6 of the airline's deficits.

When the several interests were unable to contribute the necessary funds to purchase new equipment, it was decided late in 1940 to market stock to the public. The charter was amended and a recapitalization effected whereby all of the outstanding stock of the airline was converted into 500,000 shares of common with a par value of $1, of which 300,000 shares were issued. The name of the airline was changed to Northeast Airlines. Under the new set-up, Boston and Maine and Maine Central each held 45,741 shares, or 15.2% each of total, Central Vermont Airways held 28,518 shares, or 9.5%. Solomon and Eugene Vidal, the latter having acquired an interest in the airline, received 25,376 shares, or 8.4% each and Collins received 25,000 shares or 8.3%. The largest shareholders of the remaining 34% of the stock were: Lee-Higginson Corp. 25,174 shares, 8.4%; Jackson and Curtis 7,960 shares, 2.6%; Cohu and Torey 6,028 shares, 2% and the remainder 67,000 shares being held by other underwriters and the public.

After recapitalization, the agreement between Collins, Solomon and the railroads was terminated. In May, 1941 Collins became chairman of the Board of Directors and Solomon president of Northeast. The present board, elected in September of 1942, is composed of nine directors, three of whom are connected with Boston and Maine and Maine Central and one with the Central Vermont Railroad.

There is now no understanding or agreement on the part of Boston and Maine, Maine Central or Central Vermont to pay any deficits of Northeast. Loans previously made by Boston and Maine and Maine Central to Northeast were fully paid by the issuance to them of preferred stock in 1937, which was exchanged for common stock in the refinancing of 1940. At the present time there are no loans outstanding from the railroads to Northeast. Business of the companies has been largely separated although Northeast pays a 5% commission on tickets sold by the railroad ticket agents. Fidelity bonding of railroad and airline employes was discontinued by the bonding company on the ground Northeast was no longer a subsidiary or controlled company of the railroads.

The railroads claimed that they were no longer in control of the airline. The president of Northeast and an official of the railroads, who is also a director of Northeast, testified such control was voluntarily relinquished in the refinancing program of 1940. However, the Board opinion states, the railroads have retained a combined ownership including that held by Central Vermont, of not less than 40% of this stock in order to have an interest sufficient to protect their investments. The Board further noted that the president of Northeast testified that he consults all of the groups represented in Northeast and that the public financing program was his idea.

In its conclusions, the Board held that while none of the railroads has control individually, their common officers and interests and the evidence of record show conclusively that the railroads act jointly and that they should be treated as one interest in their relation with control of the airline. While the Board states Central Vermont was not a party to the proceeding and the present record does not establish that it is subject to the control of the applicants, the evidence, the minutes of its meetings, its certified copies of contracts, causes the Board to hold that Central Vermont should be considered as exercising its influence in harmony with that of the applicants.

"While we do not believe that Congress intended us to exercise jurisdiction over a control relationship created prior to the effective date of the Act and existing unchanged from that date forward, we do believe that we possess jurisdiction in a case where the extent or effectiveness of control has increased," the opinion reads.

The Board held "there has been no change in the carriers or any increase in the control. . . . We do not mean to indicate that we believe the railroads have now divorced themselves of control. In our opinion control still exists but in diminished form. . . . With the by-law provision requiring the concurrence of a majorty of all stock issued and outstanding in order to adopt any given resolution, it is apparent that the railroads still possess an almost absolute veto power for all practical purposes."

The Board did not concur with the contention of Air Transport Association which urged CAB to assume jurisdiction if there was a substantial change in control after the effective date of the Act. "We agree with this contention as far as it relates to an increase in the extent of effectiveness of control. We do not concur, however, in the view that a decrease in the extent or effectiveness of control will give us jurisdiction.

All members of the Board concurred in the opinion except Josh Lee, who did not take part in the decision.

'Pneumatic' Cashier

A pneumatic tube cashier system has been installed in United Air Lines' Los Angeles office. The device, which eliminates the individual cash tills formerly used by counter agents, is being demonstrated in the above photo by Carol Hardebeck, saleswoman for the airline.

20 Air Route Applications Filed With CAB in 15 Days

By GERARD DOBBEN

FILING OF NEW and amended route applications continued to keep apace of the record established in recent weeks when a tabulation showed 20 applications had been filed with Civil Aeronautics Board from Aug. 26 to Sept. 9 inclusive.

Many of the new applications provide for use of helicopter service of a more or less local character. Such an application was filed by the Yellow Cab Company of Cleveland which would provide a taxi-service between Cleveland and nearby towns.

Another applicant, desiring to enter international air commerce, is Pennsylvania-Central Airlines Corp. which asks for undesignated routes between the eastern Seaboard and England. Use of three seadromes is contemplated in the fulfillment of this service.

Names of the applicants and a brief summary of their routes follow:

Air Transportation Co.

Henry G. Fleer, proprietor of this concern, 281 Tompkins Ave., Brooklyn, N. Y. filed application to provide helicopter passenger and freight service from Flatbush Ave., Brooklyn to the following points: Shelter Island, 95 miles; Bridgehampton, 90 miles; Patchogue 50 miles; Riverhead 75 miles; Babylon 45 miles; Massapequa 30 miles; Smithtown 50 miles and Huntington 36 miles. Helicopters, to be purchased from Sikorsky Aircraft as soon as the war is over, will carry 20 passengers or the equivalent in freight. Rate on passengers is listed at 3c per mile, plus 10 cents per passenger and on freight, "postal rates plus 10c per package."

Air Transport Corp.

This applicant with offices at 216 N. 2nd St., Richmond, Va. today filed for three routes to carry passengers, property and mail. Route 1 Norfolk, Va. and Bristol, Tenn., via Newport News, Richmond, Lynchburg and Roanoke, Va. 410 miles; Route 2, Norfolk to Cincinnati, via Newport News, Richmond, Lynchburg, Roanoke, Charleston, W. Va., Huntington, W. Va., Ashland, Ky., and Portsmouth, Ohio 554 miles. Route 3—Norfolk to Cincinnati via Newport News, Richmond, Washington, D. C., Harrisburg, Pa., Altoona, Pa., Johnstown, Pa., Pittsburgh, Wheeling and Columbus, 665 miles. Company expects to use bi-motor and tri-motor planes until and if helicopters are practical and available.

Arkansas Motor Coaches, Ltd.

This truck company, located at 433 W. Washington St. North Little Rock, Ark. has filed application for a certificate to carry passengers, mail and air express on eight routes as follows: Route 1—from Memphis to Little Rock, via Forrest City, Ark., Brinkley, Ark., and Lonoke, Ark. Route 2—between St. Louis and Little Rock, via Flat River, Mo., Poplar Bluff, Mo., Paragould, Ark., Jonesboro, Ark., Newport, Ark. and Searcy, Ark., with a feeder route from Dyersburg, Tenn., to Little Rock, Ark., with intermediate stops at Paragould, Jonesboro, Newport and Searcy. Route 3—between Kansas City, Mo. to Little Rock, via Clinton Mo., Springfield, Mo., Harrison, Ark., and Conway, Ark. Route 4—between Tulsa, Okla., to Little Rock, via Muskogee, Okla., Fort Smith, Ark., Paris, Ark., Russellville, Ark., and Conway, Ark. Route 5—between Oklahoma City, Okla. and Little Rock, via Seminole, Okla., McAlester, Okla., Mena, Ark., and Hot Springs, Ark. Route 6—from Houston to Little Rock, via Lufkin, Texas, Macogdoches, Texas, Shreveport, La. Texarkana, Ark., Hope, Ark., Prescott, Ark., Arkadelphia, Ark., and Hot Springs, Ark. with an alternate route from Lufkin and stops at Henderson and Marshall, Texas. Route 7—from New Orleans to Little Rock via Baton Rouge, Natchez, Miss., Monroe, La., and El Dorado, Ark. Route 8—from Jackson, Miss. to Little Rock, via Vicksburg, Miss. McGehee, Ark., and Pine Bluff, Ark.

Big Horn Airways

This company, with offices at the Sheridan County Airport, Sheridan, Wyo. asks to transport persons, property and express from Sheridan to Greybull, Cody, Thermopolis and Lander and from Sheridan to terminal point Cheyenne, Wyo. with intermediate points of Buffalo, Wyo. Gillette, Newcastle, Lusk and Torrington; "to operate a mail and express service now and later a passenger service when adequate facilities are available." Company would use its six Luscombs, 65hp. planes.

Chicago & Southern Air Lines, Inc.

Application for five new routes from Chicago through Illinois and southern and gulf states has been filed by this company. The application involves scheduled operations in transport of persons, property and mail. The routes asked for are:

Route A: between Chicago and New Orleans, via Peoria, Springfield, St. Louis, Poplar Bluff, Mo.; Jonesboro, Ark., Memphis, Helena, Ark., Clarksdale, Miss., Greenville, Miss., Jackson, Miss., Natchez, Miss., and Baton Rouge, La.

Route B: between Chicago and New Orleans. via Bloomington, Ill., St. Louis, Cape Girardeau, Mo., Cairo, Ill., Blytheville, Ark., Memphis, Greenwood, Miss., Jackson, Miss., McComb, Miss. and Bogalusa, La.

Route C: between Chicago and New Orleans. via Champaign-Urbana, Ill., Decatur, Ill., St. Louis, West Frankfort, Ill., Paducah, Ky., Dyersburg, Tenn., Jackson, Tenn., Memphis, Tenn., Tupelo, Miss., Columbus, Miss., Jackson, Miss., Hattiesburg, Miss. and Gulfport-Biloxi, Miss.

Route D: between Memphis, Tenn. and Houston, Tex. via Pine Bluff, Ark., El Dorado, Ark., Shreveport, La., Natchitoches, La. and Beaumont, Tex.

Route E: between Memphis, Tenn. and Houston, Tex., via Little Rock, Ark., Hot Springs, Ark., Texarkana, Texas-Arkansas, Shreveport, La., Marshall, Tex., Tyler, Palestine and Huntsville, all in Texas.

Continental Air Lines, Inc.

This company filed application for a certificate to carry mail, passengers and property in scheduled operations between Hutchinson, Kansas and Salina, Kan. (a) by the issuance of a single permanent, temporary, limited or restricted certificate covering the route between the terminal points Hutchinson and Salina; and/or (b) the authorization of Hutchinson as a co-terminal point with Kansas City on Route No. 60; and/or (c) the authorization of Salina as a co-terminal point with Tulsa, Okla. on Route 43; and/or (d) the authorization of Hutchinson as an intermediate point between Denver and Salina on Route 60; and/or (e) the authorization of Salina as an intermediate point between Dodge City, Kan. and Hutchinson on route 45; and/or (f) the issuance of a single permanent certificate combining routes No. 43 and No. 60 into a single route.

Gordons North South Air Lines Inc.

R. C. Dodge, vice president of this concern whose offices are located at 1407 Sterick Building, Memphis, Tenn. asks for a route for transport of property generally between Detroit and Buenos Aires, Argentina. The route and mileage between intermediate points is as follows: Detroit to Chicago 237 miles; Chicago to St. Louis 251 miles; St. Louis to Memphis 258 miles; Memphis to Vicksburg, Miss. 199 miles; Vicksburg to New Orleans 165 miles: New Orleans to Havana, Cuba 694 miles: Havana to LaGuaira (Port of Caracas) Venezuela 1,375 miles; La Guaira to Rio De Janeiro, Brazil 2,788 miles and Rio De Janeiro to Buenos Aires 1,123 miles. The application has filed a table showing at which specific points cargo would be accepted and at which points cargo would not be accepted for delivery. Application states company does not now possess equipment for proposed route.

Land and Water Air Service Co.

Russell V. Trader, County Airport, Pittsburgh, asked for this company scheduled and charter service of persons and property to cities and towns along the following rivers: Allegheny, Youghiogheny, Monongahela, Ohio and Beaver. Principal points to be served are: Pittsburgh, Jamestown, N. Y.; Hagerstown, Md.; Charleston, W. Va.; Youngstown, and Cincinnati. The applicant would use both airports and rivers for landing of proposed amphibian planes.

Marion Trucking Co.

Fourteen routes, with passengers and property over 10 of them and passengers, property and mail over four. is asked by this company, located at 1620 Factory Avenue, Marion, Ind. Principal, but not all points, listed on the 10 routes are: Route 1, Chicago to Evansville, Ind. via Blue Island, Kankakee, Danville, Terra Haute and Princeton, Ind.

Route 2, South Bend to Louisville, Ky., via Rochester, Ind., Peru, Ind., Indianapolis, Jeffersonville.

(Turn to page 45)

"Pick me up at eight...and we'll fly to the club..."

AMERICANS will find a whole new way of life built around their personal planes after the war. Live a hundred miles from town, if you like, and fly in to the office or for shopping. Travel to the next state as you now do to the next city. A week's vacation can cover thousands of miles of effortless travel.

Your plane may be a trim monoplane, a helicopter, a "flying wing," or some type as yet unheard of. But you'll be wise if you follow the lead of America's leading designers and manufacturers who specify *Franklin* engines. For smoothness, for economy, for trouble-free years of operation, it is hard to match Franklin . . . pioneers in air-cooled power for 43 years.

AIRCOOLED MOTORS CORP. SYRACUSE, N. Y.

Franklin

FINE AIRCRAFT ENGINES

Aircooled Motors Corporation's entire facilities are now devoted to the design and production of Franklin warplane engines for military and naval use.

Route Applications

(Continued from page 42)

Route 3—St. Louis to Cincinnati, Harrisburg, Ill., Evansville, Ind. Owensboro, Ky., Louisville and Madison, Ind.

Route 4—St. Louis, Mo. to Cincinnati, via Vandalia, Ill., Terra Haute, Indianapolis, Rushville, Ind. and Hamilton, O.

Route 5—St. Louis to Fort Wayne, via Springfield, Decatur, Champaign, Urbana, Danville, Ill., Crawfordsville, Ind., Indianapolis, Elwood, Marion and Huntington, Ind.

Route 6—Ft. Wayne to Cincinnati, via Wabash, LaFayette, Frankfort, Indianapolis, New Castle, Ind. and Eaton, Dayton, Middletown and Hamilton, O.

Route 7—Indianapolis to St. Louis, via Bloomington, French Lick, Evansville, Ind. and Henderson, Marion and Paducah, Ky., and Cairo, Ill., Jackson, Flat River and Festus, Mo.

Route 8—Chicago to St. Louis, via Joliet, Streator, Decatur and Granite City, Ill.

Route 9—Chicago to St. Louis, via LaGrange, Downers Grove, Peoria and Alton, Ill.

Route 10—Chicago to Indianapolis, via Hammond, Whiting, East Chicago, Gary, Michigan City, LaPorte, South Bend, Mishawaka, Elkhart, Fort Wayne, Muncie and Anderson.

Routes over which mail would also be transported follows: Route 1, Chicago to Memphis, via Kankakee, Danville, Ill., Terra Haute, Vincennes, Ind., Paducah, Ky., Cairo, Ill., Sikeston, Mo. and Blytheville, Ark.

Route 2—Chicago to Cincinnati, via LaFayette, Kokomo, Marion, Muncie, Anderson, New Castle, Richmond and Hamilton, Ind.

Route 3—Detroit to St. Louis, via Monroe, Toledo, Defiance, Ft. Wayne, Lafayette, Danville, Champaign, Urbana, Decatur, Springfield and Alton.

Route 4—Detroit to Memphis, via Monroe, Mich., Toledo, Defiance, Ft. Wayne, Indianapolis, French Lick, Paducah, Cairo, Sikeston and Blytheville.

Applicant states it does not now own the aircraft it proposes to use over these routes. Ralph Marcuccilli, of Marion, Ind. is president of the company and owns 50% of the stock. Company is now engaged in inter and intrastate trucking and tanker hauling.

The Mutual Trucking Co.

This trucking company with offices at 838 Edison Building, Toledo, Ohio filed for a certificate to operate an air service for cargo between Chicago and Minneapolis and St. Paul, with Milwaukee, Wis. as an intermediate stop. The application was filed by Loren Hendrix, president of the trucking concern.

North Coast Transportation Co.

This company through L. E. Karrer, vice president, 200 Central Terminal, Seattle (1) Washington, asked for four routes for transport of passenger, mail and light express. The routes: 1—Seattle to Portland, via Tacoma, Fort Lewis, Olympia, Chehalis, Centralia, Kelso, Longview and Vancouver, Wash. 140 miles; 2—Seattle to Blaine, Wash. via Everett, Mt. Vernon and Bellingham 95 miles; 3—Tacoma to Bremerton 25 miles; 4—Blaine to Vancouver, B. C. Canada 24 miles. The company, now engaged in highway passenger and light express service, proposed to use helicopters.

Pennsylvania-Central Airlines Corp.

This application asks a certificate to transport persons, property and mail between the eastern seaboard of the United States and Great Britain, proposing to serve such cities on the east coast as may be designated as ports of origin by CAB and such ports of entry in England as may be so designated by proper authority. On the map accompanying its application, PCA shows prospective location of three seadromes and four radio beacons which would be used in its trans-ocean flights.
(Also see PCA application on page 48)

Ringsby Truck Lines, Inc.

Located at 3262 Blake Street, Denver, Col. this company filed for permission to operate an air route for transportation of property between the following terminal points: Chicago, Sioux City, Ia., Omaha, Neb.; Denver, Grand Junction, Col.; Salt Lake City, Los Angeles and San Francisco. J. W. Ringsby, president of the company, filed the application.

Schreiber Trucking Co.

With offices at 1391-1397 Washington Boulevard, Pittsburgh, Pa. this company has filed application to operate for transport of freight only, over the following routes: Pittsburgh and Washington, D. C.; Pittsburgh and Baltimore; Pittsburgh and Philadelphia; Pittsburgh and New York City via the intermediate point of Newark; Pittsburgh and Boston; Pittsburgh and Albany; Pittsburgh and Rochester, N. Y.; Pittsburgh and Buffalo; Pittsburgh and Chicago and between Pittsburgh and Cincinnati. Samuel Schreiber and Mrs. Harry Schreiber operate the Schreiber Trucking Co. as a partnership.

United Transports, Inc.

A certificate to transport property in "interstate and foreign" commerce is asked by this company with offices in the First National Building, Oklahoma City, Okla. The application asks routes between "all points and places in the states of Missouri, Kansas, Oklahoma, Texas, Arizona and New Mexico."

Vancouver Island Air Lines Ltd.

Located on Broad St., Victoria, B. C., Canada, this company has refiled its application of Aug. 7, 1943 for a permit as a foreign air carrier to transport passengers and goods between Victoria, B. C. over five routes connecting with the following points: Seattle, Wash., Anacortes, Wash., Bellingham, Wash., Port Angeles, Wash. and Everett, Wash. The company states operations will start as turning wheel, helicopter, gyroscope or suitable aircraft become available. Harold Husband is president of the company.

Vermont Transit Co.

William S. Appleyard, president of this concern with offices at 133 St. Paul St., Burlington, Vt. applied for 10 routes for transport of passengers, property and mail as follows:

Route 1, Burlington, Rutland, Bennington, all in Vermont and Pittsfield, Mass.,

Route 2—Albany, Bennington, Springfield, Vt., Concord, N. H. and Portland, Me. Route 3—Rutland, Springfield, Fitchburg, Mass., and Boston; Route 4—Burlington, Montpelier, White River Jct., Vt. Bellows Falls, Vt. and Springfield, Mass.; Route 5—Rutland, White River Jct., Concord, Boston; Route 6—Newport, Vt., Morrisville, Vt., Montpelier and White River Jct.; Route 7—Newport, Vt., Woodsville, N. H., White River Jct., and Claremont, N. H.; Route 8—Burlington, St. Johnsburg, Vt., Littleton, N. H. and Portland, Me. Route 9—Barre, Vt., Woodsville and Littleton; Route 10—St. Johnsburg, Montpelier and Rutland. Company now operates an intra-state common carrier bus service as a local transit carrier in Burlington and vicinity. Stock in the company is owned by Appleyard, Charles F. Black, John W. Goss and Robert F. Thompson. Company would use helicopters, carrying not less than 7 passengers, and proposes to coordinate air schedules with bus schedules and also serve established long distance air routes on a feeder basis.

West Ridge Transportation Co.

F. X. Bowman, 301 Main St., Girard, Pa., filed for this company for routes to transport persons, property and mail between the following terminal points: Buffalo and Erie; Buffalo and Kane, Pa.; Buffalo and Jamestown, N. Y.; Westfield, N. Y. and Olean, N. Y.; Dunkirk, N. Y. and Warren, Pa.; Buffalo and Pittsburgh; Erie and Pittsburgh; Meadville, Pa. and Pittsburgh; Erie and Ashtabula, Ohio; Erie and Kane; Erie and Franklin, Pa.; Meadville, Pa. and Oil City, Pa. The total mileage involved is 968 miles. Helicopter planes would be used.

Yellow Cab Co.

J. T. Smith, president of this company with offices at 2020 W. Third Street, Cleveland, filed for a certificate to operate a civil aircraft taxicab service for transport of passengers, mail and express in Cleveland and metropolitan area through use of helicopter type of aircraft. Eight routes applied for are: Route 1—Cleveland, Rocky River, Avon Lake, Elyria, Lorain, Vermilion, Huron, Sandusky; Route 2—Cleveland, Ashland, Mansfield; Route 3—Cleveland, Medina, Wooster; Route 4—Cleveland, Akron, Massillon; Route 5—Cleveland, Akron, Canton, Alliance; Route 6—Cleveland, Ravenna, Salem; Route 7—Cleveland, Warren, Youngstown; Route 8—Cleveland, Willoughby, Painesville, Ashtabula, Conneaut, Youngstown. Applicant proposes to establish a new division known as Yellow Cab Helicopter division. Yellow Cab company and its affiliate, The Zone Cab Corporation, operates a taxicab service and claims its cabs were driven a total of 19,461,012 miles in 1942.

New EAL Ticket Office

Eastern Air Lines announces the opening of a new ticket office at 14 Providence St., Boston, Mass., under the direction of Gertrude M. Roche, who will serve in the capacity of city manager.

Commercial Air Express Observes 16th Birthday

Commercial air express is 16 years old this month. In September, 1927, 26 cities from coast to coast witnessed the start of an air cargo service that has grown from 17,000 shipments in 1928 to more than 1,405,000 in 1942.

In 1927, many of the mail and express ships were single-engined, open cockpit biplanes. Packages were stowed wherever there was room, with the pilot often sitting on his cargo. Coast-to-coast shipments required 36 hours with 16 refueling stops, compared with 16-hour, overnight transcontinental flights today.

The inter-city schedules of air express are twice as fast today as they were 16 years ago. Rates are one-third of what they were. A 25-pound package from New York to the West Coast cost $65 in 1927; today the rate is $21.

Air express figures for April indicate the increasing volume being handled this year. More than 2,558,000 pounds of express were handled by the 18 domestic airlines for an increase of 68% over April, 1942. Gross revenue was up 55.3%. Monthly gross revenue exceeded the million-dollar mark for the first time.

International air express, flown between the 350 U. S. and Canadian airport cities, and Central and South America, Mexico, Bermuda, and Alaska, amounted to 87,420 shipments in the first six months of this year, or 5,862 shipments more than in the comparable 1942 period.

Coast Firm to File

Harry S. White, president of Coast Aviation Corp., Eagle Field, Dos Palos, Cal., announced last fortnight that he would file for two routes for transport of mail, passengers and property on regular schedule between Oakland, Cal. and Burbank, Cal. via San Francisco, Palo Alto, San Jose, Watsonville, Salinas, Monterey, King City, Paso Robles, San Luis Obispo, Santa Maria, Santa Barbara, Ventura and Oxnard. Route B—Burbank to Reno, Nevada, via Lancaster, Mojave, Lone Pine, Independence and Bishop, all in California. Applicant was organized in 1942 and operated the Army Air Force Training Detachment school at Eagle Field until June 30, 1943 when it disposed of its interest in said school to its stockholders. At present time 1,000 shares of common stock and 10 shares of preferred stock are outstanding, giving corporation, with its surplus, a total net worth in excess of $67,919.39. Applicant proposes to use four new bi-motor land planes with seating capacity of 4 or more passengers.

Gen. Connolly Decorated

For "exceptionally meritorious conduct in the performance of outstanding services as Military Director of Civil Aviation, Maj. Gen. Donald H. Connolly has been awarded the Legion of Merit, the War Dept. announced Sept. 6. "Gen. Connolly's efficient guidance of numerous, complicated civil air activities has made possible effective utilization by the Army Air Forces of civil aviation facilities," the citation said. "His untiring efforts and devotion to duty in directing civil aviation activities to the advantage of the military services have been of great value to the Government and the Army Air Forces." Gen. Connolly has since been transferred to another assignment.

THE FRONT COCKPIT IS EMPTY TODAY

Body-english substitutes for the voice tube.

Another Cadet has just now been waved off THUNDERBIRD FIELD... off on that big step toward his wings... his first solo flight.

Yes, the front cockpit is empty today. But the instructor has put in his place something now far more important to the student.

It's Confidence. The kind of confidence that comes to the student who knows he has been taught well... schooled soundly.

To build such confidence takes not only fine planes and equipment but outstanding men ... instructors with skill and knowledge that inspire and command respect... and with the ability to instill their personal "know-how" in the students.

Such are the civilian instructors at SOUTHWEST. The oldest is 49 years... a combat pilot in World War 1. The youngest is 21. All together our instructors have an average flying time of 1356 hours. Ten times that required of the cadet to complete his *entire* training.

Instructors Like These are another example of the kind of facilities provided under the Army Air Forces-Civilian Schools program for safe, speedy, *confident*, training. And man for man... plane for plane... SOUTHWEST is equipped to assist the Army toward its goal: "Always the most competent Air Forces in the world."

THUNDERBIRD FIELD · FALCON FIELD · SKY HARBOR · THUNDERBIRD II
TRAINING THE FINEST FIGHTERS TODAY, THE FINEST FLYERS TOMORROW
CONTRACTORS TO THE UNITED STATES GOVERNMENT · UNITED STATES ARMY · UNITED KINGDOM GOVERNMENT

SOUTHWEST AIRWAYS
Phoenix, Arizona

PCA Would Serve Small Cities Between Major Terminal Points

AIR SERVICE for dozens of small cities lying between the major air terminals of 23 states is proposed in a route application filed with the Civil Aeronautics Board September 9 by Pennsylvania-Central Airlines.

PCA claims that the new routes are a direct outgrowth of the company's pioneering in the "short-haul" field, and are part of a design for postwar employment for thousands of American airmen.

"Never before has any airline proposed such a comprehensive program for air development," said C. Bedell Monro, PCA president. "It is the result of several years of surveys and study, and offers a real 'service pattern' for the sectors included. It gives the American people in the most heavily populated sections a flexible mobility of travel that heretofore has not been possible anywhere."

Monro termed the application "PCA's answer to the urgent demand for postwar planning to give employment and not handouts to the thousands of returning soldiers seeking life work in aviation."

Direct services between each of the following major points are proposed in the application: Detroit and New York; Cleveland and New York; Chicago and New York; Pittsburgh and New York; Washington and Chicago; Detroit and Boston; Cleveland and Boston; Pittsburgh and Boston; Pittsburgh and New Orleans via Birmingham, Ala., and Mobile, Ala.; Chicago and Miami via Atlanta; Detroit and Miami; Cleveland and Miami, Pittsburgh and Miami; Buffalo and Miami; Washington and Miami; Norfolk and Miami; Minneapolis and Chicago; Minneapolis and Pittsburgh; Detroit and Minneapolis; Cleveland and Minneapolis; Washington and Minneapolis; Pittsburgh and Chicago; Cleveland and Chicago, and Detroit and Chicago.

Within this framework, PCA plans to establish direct mainline service to nearly 100 other cities, some of which are along the route presently served by this company, and many of which have never previously been given the benefits of air service. Through this integration, PCA maintains, no city listed in the new development will be in any way isolated or be considered merely a "jumping off" point, but will have a direct trunk line link with every sector of the United States. These cities are:

Birmingham and Mobile, Ala.; Hartford, Conn.; Wilmington, Del.; Daytona Beach, Jacksonville, Orlando, Vero Beach and West Palm Beach, Fla.; Atlanta, Augusta, Brunswick, Macon, Savannah and Waycross, Ga.; Fort Wayne, Indianapolis and South Bend, Ind.; Louisville, Ky.; Cumberland, Md.; Springfield, Mass.; Ann Arbor, Battle Creek, Jackson and Kalamazoo, Mich.; St. Paul, Minn.; Newark and Trenton, N. J.; Albany, Binghamton, Elmira, Rochester, Syracuse and Utica, N. Y.; Asheville, Charlotte, Greensboro, Raleigh, Wilmington and Winston-Salem, N. C.; Akron, Cincinnati, Columbus, Dayton, Toledo and Youngstown, Ohio; Allentown, Altoona, Bethlehem, Erie, Harrisburg, Johnstown, Meadville, Philadelphia, Reading, Scranton, Warren, Wilkes-Barre, Williamsport and York, Pa.; Charleston, Columbia, Florence, Greenville, and Spartanburg, S. C.; Providence, R. I.; Chattanooga, Knoxville, Nashville, Bristol (Tri-Cities), Tenn.; Charlottesville, Lynchburg, Norfolk, Richmond and Roanoke, Va.; Charleston, Clarksburg, Dunbar, Elkins, Huntington and Parkersburg, W. Va.; and Milwaukee, Wisconsin.

Newspapers for Quebec

At the height of the Quebec Conference, 800 pounds of newspapers were flown into the city each day by Canadian Pacific Air Lines. Papers from New York, Baltimore, Boston, Chicago, Montreal, Toronto, Winnipeg, Vancouver, Ottawa, Halifax, and St. John were the most popular. Photo shows an unloading operation at the Chateau Frontenac, Quebec.

Here's a New Method for 'Painting' White Stripes on Black-top Runways

CLARK M. KEE, airport builder for American Airlines in Mexico, has observed for two years that the white center line stripe of the Laredo-Mexico City highway has stood up better and has retained a greater degree of night visibility than the center stripes of any other highways he has travelled. Recently, he inquired as to how the stripe on this particular highway was applied. He learned that the center line was first painted with asphalt and then was covered, while fresh, with a mound of white quartz chips to a depth of between two and three inches. The chips were allowed to remain until the action of traffic had thoroughly rolled into place all of the chips possible for the asphalt to take up and retain. Surplus chips were swept up.

"This stripe has excellent wearing qualities, superior to paint, is composed of cheap materials, and is quick and easy to apply," writes Kee. "There is no reason why a mechanical application of asphalt could not be made of any desired width of stripe, followed by men placing the mound of chips, on black-top runways. Marble, white limestone, quartz, or any other kind of chips possessing reflecting qualities and a white color should give satisfactory results far beyond the results usually obtained through using pavement paints.

"From experience it has been found difficult to persuade some communities to provide some pattern of white stripping on their black-top runways. One basic and sound reason for this reluctance is cost plus the poor wearing characteristics of pavement paints, which require frequent and expensive renewal. The method described should solve the stripping problem in these communities."

Kee, who built the Monterrey, Mex., airport, is now stationed in Mexico City with American Airlines.

New Illinois Airline

The secretary of state of Illinois has issued a charter to Berry-Wagner Airways, Inc., 4530 Ellis Ave., Chicago, for a commercial flying service and to transport freight, passengers, baggage, mail, and express by aircraft. Incorporators are Jack H. Berry, Jr., Jack Wagner, and Lois Wagner.

G. B. Dobben Joins AMERICAN AVIATION

Gerard B. Dobben, of Muskegon, Mich., for the past nine years secretary to Rep. Albert J. Engel (R., Mich.), has joined the editorial staff of *American Aviation*.

Well known on Capitol Hill, Dobben was elected president of the Congressional Secretaries Club early this year. During 1942 he served as executive secretary of the Michigan State Society and for two years was secretary of the Association of Male Secretaries to Republican Senators and Representatives.

Prior to joining Rep. Engel, Dobben was for 12 years a reporter on the Muskegon *Chronicle*.

TWA Schedule Added

A seventh transcontinental schedule has been added to Transcontinental and Western Air's domestic war services, V. P. Conroy, vice president-traffic announces. The recent release by the army of one plane to TWA will permit the air line to extend a heretofore New York-Chicago flight, "The Sky Rocket," to Los Angeles, Conroy said.

THERE IS A NORTHWEST PASSAGE -IN THE AIR!

A legend persists in the Northland that the ghost of Henry Hudson still haunts the icy waters where, over 300 years ago, he perished in his search for the fabled Northwest Passage.

Today such a passage is a reality. Great, silvery ships of the air skim those northern spaces... and the air routes pioneered by companies now comprising Canadian Pacific Air Lines have opened a whole "New Canada"... beyond the fringe of surface transport.

Just now, war traffic wings these northern air lanes... tomorrow they will tap great new resources... help bind freedom-loving nations closer by short, roof-of-the-world air routes.

CANADIAN PACIFIC AIR LINES

Canadian Pacific AIR LINES

THE WINGS OF THE WORLD'S GREATEST TRAVEL SYSTEM

RESCUED AT SEA...BY THE GIBSON GIRL

The Gibson Girl—automatic SOS transmitter—is destined to become the sweetheart of the AAF.

This lightweight, waterproof emergency equipment, which Bendix Aviation, Ltd., exclusively developed in collaboration with the Signal Corps, is saving the lives of pilots and crews who are adrift and in distress at sea.

To each of these men now goes an award of recognition and membership in the Order of Gibson Girls. If you, too, owe your life to this equipment, or know of someone who has been saved, write today for credentials in the most exclusive fraternity in the world. Bendix Aviation, Ltd., North Hollywood, California.

The Gibson Girl, so-called because of its hour glass contour, is a famous member of the Invisible Crew... always ready for anyone to summon rescue by merely turning a crank. The set automatically spells out SOS and generates power to blanket an area of 100,000 square miles.

THE INVISIBLE CREW
Bendix
AVIATION CORPORATION

Important Changes in Economic Regulation Announced by CAB

The Docket section of the Civil Aeronautics Board has started functioning under the revised filing regulations which place upon it the responsibility of notifying all existing carriers when new route applications are entered.

Under new CAB procedure, the applicant need no longer serve notice on all existing carriers—a procedure which was rapidly becoming burdensome and cumbersome because of the accelerated pace with which new applications have been coming to the Board. Posting of notice in the office of the Secretary and circularizing of all existing carriers and known applicants by the Docket section will constitute notice under the revised provisions of Section 238.1 of the Economic Regulations. The Docket Section sent out its first list of applicants, with listing of the routes desired, under date of Aug. 31.

Other important changes, one involving the time limit for filing intervention notices, the other involving segregation of domestic and foreign applications, are included in the new regulations. The further revision of Section 238.1 will require the carrier or applicant to file in separate documents applications for domestic and applications for overseas and foreign air transportation. This is done to separate the type of application regarding which the President has some participation under Section 801 from those with which he is not concerned. The fact that the applications must be filed separately is not meant necessarily to prevent their consolidation for purposes of hearing.

Another change will obviate the necessity of attaching a map showing other existing air line services. The map need show only the route over which the applicant proposes to operate.

Under revision of Section 285.4 concerning intervention, the new regulation will allow the filing of intervention notices at any time prior to the first pre-hearing conference or if there is no pre-hearing conference then filing will be permitted prior to 10 days before the hearing. Under the old rule, intervention motions had to be filed within 15 days after application was filed. Many of the motions to intervene later were consolidated. CAB records show that from June 1 to Aug. 20th 218 motions for leave to intervene had been filed, 181 of them by existing air carriers, four were motions of non-certificated applicants and 33 by other parties including the Department of Justice.

The legal vehicle for accomplishing the purposes of intervention, under the revised procedure, will be a petition for leave to intervene rather than a "motion to intervene" under existing regulations.

Ordinarily the Board circulates before adoption all proposed changes in regulations, soliciting comments from the industry. In this case however, it was felt the emergency and special circumstances indicated that this practice should be foregone as immediate relief appeared to be necessary due to the tremendous influx of new applications.

TWA To Ask CAB Approval of Atlantic, Pacific Air Routes

TRANSCONTINENTAL AND WESTERN AIR, Inc., announces that it contemplates filing two proposals with the Civil Aeronautics Board soon, as follows:

1. An application for routes linking five of the nation's largest cities (New York, Chicago, Boston, Detroit, and Washington) with London and Paris.

2. An application to operate between Los Angeles and Honolulu.

In announcing the Los Angeles-Honolulu proposal, Jack Frye, TWA president, said that although the airline has been operating overocean for 18 months for the Air Transport Command, this is its first application for a permanent overseas route certificate. This application has been given priority by TWA in view of the urgent need for service and because no negotiations for landing rights with foreign countries are involved, he said.

"Expanded air service for Washington is necessary and should be given early consideration because of Washington's increasing importance in world affairs," Frye said. "While direct transoceanic service will be provided from all cities on the TWA system, traffic volume will justify regular scheduled operations from Chicago, Boston, Detroit, and New York."

The proposed trans-Atlantic service will depend on the government's obtaining the necessary approval of Britain and France, Frye pointed out.

"We assume that the removal of barriers to international transportation will be an essential declaration in the program of the United Nations," he added.

A. W. Dallas Joins ATA

Allen W. Dallas, assistant to the president of Fleetwings, Inc., of Bristol, Pa. joined the Air Transport Association Sept. 1 as engineering and maintenance liaison officer between ATA and the War Department.

Dallas is secretary of the Association's Engineering and Maintenance committees and in his new position will work with John Groves, former manager of the Washington Airport, who also recently joined ATA.

Braniff Opens Laredo Line

Braniff Airways on Sept. 1 opened mail-express between San Antonio and Laredo, making direct connections at the latter point with Compania Mexicana de Aviacion for Mexico City. Transportation of passengers will be initiated as soon as approval is received from CAA.

PAA Public Relations Managers

Following a recent week-long conference in New York, Pan American Airways' public relations managers from all parts of the system boarded an Atlantic Clipper for a base in Canada. Shown, left to right, just before boarding the plane are: (Kneeling) Douglas Clark, Buenos Aires; Robin Little, LaGuardia Field; Jose Rojas, Mexico City; S. Roger Wolin, Mexico City; Carl Anderson, Los Angeles; Devon Francis, New York; Paul Wollam and Charles McGee, LaGuardia Field. (Standing) Don Ferguson, Natal; Harrison Roberts and James Moloney, New York; Marshall Bannell, Washington, D. C.; Capt. George Doole, commanding the flight; Eric Troop and Paulo Einhorn, Rio de Janeiro; Fred Foulk, Lima; George Gardner, San Francisco.

Clearing House to be Set Up For Inter-Line Ticket Claims

PROPOSED INCORPORATION papers for the establishment of Air Lines Clearing House Inc.—an agency which is to act as a clearing house for the settlement of ticket claims arising out of interline passenger traffic—have been submitted to all of the domestic airline companies and Trans-Canada Air Lines for final approval.

The 18 domestic airlines and Trans-Canada Air Lines recently gave approval to the plan submitted by a committee of the Airline Finance and Accounting Conference of the Air Transport Association of America for the establishment of such an agency and speedy approval of the corporate set-up, which involves issuance of 1,000 shares of stock at $1 a share, is expected. E. F. Kelly, executive secretary of the Airline Finance and Accounting Conference division, expects the new agency will open offices in Chicago around Jan. 1. From 15 to 20 persons will be employed.

Need for the clearing house has been growing with the tremendous increase in air passenger traffic. Under the system now in use, each company must settle its "joint-use ticket" account with the other 17 airline companies. The manual check of tickets issued by one company against stubs lifted by another line had developed into a big task, involving considerable time and expense for all companies.

When Air Lines Clearing House, Inc. starts operating, airline companies will send their portion of "joint-use tickets" to the agency's office where a collating machine will collate them and make possible systematic accounting and definite periods of settlement. The central agency will disburse the checks as business adjustments require. Tickets and stubs will be so perforated that when they are run through the collating machine they will be brought together for accounting purposes.

The new plan, providing for the organization of Air Lines Clearing House, Inc., grew out of discussions and studies made at some 10 meetings of the committee. R. G. Lochiel, treasurer of Pennsylvania-Central Airlines Corp., is president of the conference. E. I. Whyatt, of Northwest Airlines, Inc., was chairman of the committee. Other members of the committee included the following: H. K. Rulison, American Airlines, Inc.; C. G. Adams, Braniff Airways, Inc.; J. A. Nooney, Chicago & Southern Air Lines, Inc.; L. B. Judd, Delta Air Corp.; John Lockhart, TWA; and N. B. Haley, United Air Lines Transport Corp.

Kelly believes this is but the first step in establishing many other financial clearances which will be of mutual help to all air line companies.

CAB Calendar

SEPT. 22—Braniff Airways, Inc., hearing on application to include Moline as an intermediate stop. (Tentative date).

SEPT. 25—TWA's hearing on application to make intermediate stop at Columbia, Mo. (Tentative date).

SEPT. 28—Feeder-pickup investigation.

OCT. 4—TWA, Chicago and Southern, Eastern Air Lines, Inc. and American Airlines, Inc. pre-hearing conference on application involving routes touching Detroit, Indianapolis, Memphis, St. Louis and Toledo.

OCT. 4—American Airlines Inc., pre-hearing conference on application to stop at Akron, Ohio on Route 22.

OCT. 15—TWA's hearing on application to make intermediate stop at Lancaster, Pa. (Tentative date).

UAL Official Honored

Cyril C. Thompson, vice president of United Air Lines, is shown (left) as he received an honorary Doctor of Laws degree from Dr. Herbert C. Mayer, president of Parsons College, Fairfield, Ia.

Recoopering Saves PAA Weight

Transpacific Division of Pan American Airways claims to have saved 27,453 pounds on cargo shipments during June through substituting lightweight cardboard cartons for weight-and-space-consuming wooden cratings. As of July 31, a total of 134,102 pounds has been saved on Transpacific cargo shipments since PAA's recoopering system was adopted at the Treasure Island base in the early months of the war. A crew of six men is kept constantly at work recoopering Transpacific air shipments at Treasure Island.

ALL AMERICAN AVIATION INC. reports that air mail traffic has increased 73% and air express traffic 75% over 1942. July broke all records with airmail volume up 74% and air express 29% over July, 1942. The All American pick-up line served 116 cities and towns in six states before beginning operations. Under its CAB certificate of Aug. 12, 1940 the company operated for a year on an experimental basis under the Post Office Department.

Latin American Fare Reductions Are Made by AA, Pan American

Pan American Airways and American Airlines on Sept. 1 put into effect reduced fares to points in Latin America.

Typical PAA reductions are: Brownsville-Mexico City, from $35 to $29; Brownsville or New Orleans or Laredo to Buenos Aires, from $530 to $524 via west coast and from $605 to $599 via east coast; from the same points to Lima, from $350 to $344; from the same points to Balboa, from $160 to $154. These fares are one-way, equivalent reductions applying to round trips. The new gateway to Latin America through Laredo was recently opened with extension of service by Braniff Airways from San Antonio to Laredo, connecting with Cia Mexicana de Aviacion S. A. at Nuevo Laredo.

Insurance premiums for American Airlines' flights over Mexico are now absorbed into the fares paid. Charles Rheinstrom, AA vice president-traffic, announced. This amounts to a reduction in fare, because although the fares will remain the same they will include the premium required by Mexican law on all forms of travel in Mexico, he said.

Divide Cargo Loads Among Airlines, Says Shipyard Official

Air Cargo shipments involved in rehabilitating foreign nations after the war should be distributed among the airlines having franchises to serve abroad, in the opinion of D. B. Shields, traffic manager of the Lake Washington Shipyards, Houghton, Wash.

This viewpoint by a representative of water carrier interests was expressed by Shields in a letter commenting on Aeronautical Chamber of Commerce suggestions for postwar use of surplus aircraft (*American Aviation*, July 1).

In reference to a suggestion that the surplus carriers of the government be used to return military personnel to this country and on the return trip carry supplies for rehabilitation, Shields wrote:

"It is very probable that for several years following the war, export business will be considerably controlled by the government and will consist mainly of supplies and material for rehabilitating foreign countries. Your proposal, therefore, amounts to a proposal to eliminate privately owned airlines from the field of foreign transportation. It is hardly consistent to take away from private airlines the business for the hauling of which you propose to sell them new planes.

"It seems to me that the manufacturers and their prospective customers should get together on this point and agree that airlines shall be free to compete for business to foreign countries; and that the government in the movement of its own freight and of rehabilitating supplies, should distribute the tonnage among the airlines having franchise to serve abroad. The transporting of such tonnage would provide a basis for these airlines to firmly establish themselves for handling normal peacetime business."

Working for DEAR LIFE

Rrrr-up . . . Rrr-up . . . Rrrr-up . . rup . . rup . . up . . Minute after minute . . . hour after hour . . . day after day . . . this staccato machine-chatter goes on, down the long lines of intense operators in the Switlik parachute factories. ☆ ☆ ☆ Sewing for dear life, indeed, that the precious lives of those few, to whom so many owe so much, shall have that vital protection against the hazards of combat flying. ☆ ☆ ☆ Thru the genius of Switlik engineers, Switlik methods of production have been developed that are daily establishing records in making more chutes and faster deliveries for protecting those lives which are speeding up our march to Victory.*

SWITLIK
SAFE-T-CHUTES

*Two one-hundred-dollar bonds put a paratrooper back of the Axis!

Do your best for the 3rd War Loan drive.

SWITLIK PARACHUTE COMPANY
Trenton, New Jersey

Board Studies Texas Applications of CAL, Braniff and Essair

THE CIVIL AERONAUTICS BOARD has under consideration the argument in the Texas cases which have been before the Board in one form or another since 1939. The Board heard the argument on Sept. 6 and 7, with the first phase being devoted to applications involving routes between San Antonio and El Paso and the second phase relating to the application of Essair for a temporary application for a feeder line between Amarillo and Houston.

During the hearings, public counsel for the second time recommended that Continental Air Lines, Inc. be given a permanent certificate on a route between Hobbs, N. M., to San Antonio, via Midland, Big Spring and San Angelo, Texas. At the same time, public counsel recommended a temporary war certificate be granted American Airlines Inc. between San Antonio and El Paso as a part of its El Paso, Monterrey, Mexico and Mexico City route.

Oral argument involved both the temporary and permanent aspect of the applications. Braniff Airways, Inc., the other air carrier actively interested in the proceedings, had asked for a route between San Antonio and El Paso, via Uvalde, Del Rio, Ft. Stockton and Marfa, all in Texas.

Public counsel recommended that if Continental is denied a permanent certificate, it should be given a temporary certificate.

In its original opinion in this case, May 10, 1943, the Board denied the applications for permanent certificates of Braniff and Continental but held it would look with favor on applications for temporary certificates. Applications were then refiled by both Braniff and Continental for both temporary and permanent certificates and American came in with an application for both temporary and permanent certificates between San Antonio and El Paso as a part of its international route to Mexico City.

Terrell C. Drinkwater, executive vice president of Continental, contended that both from the viewpoint of war necessity as well as the permanent aspects of the situation, the cities on Continental's proposed route showed the greater need for air transportation and likewise promised to generate the most traffic, both in war and peace times. Continental had filed the original application Aug. 23, 1938 and on the basis of the evidence introduced at that time, the CAB examiner had recommended favorable action on its application.

American's argument was based largely on the fact that its Mexico route from Monterrey now comes within 168 miles of San Antonio and that it further has approximately 6 seats open which would help to ease the bottleneck through the Ft. Worth-Dallas gateway where air traffic is unusually heavy. Hamilton Hale, American counsel, contended this was not the time for consideration of experimental service such as he said was embodied in Braniff's application for local service to small Rio Grande towns in sparsely settled areas. He said the wa demands on existing aircraft facilities d not warrant the granting of such a rou

Roger J. Whiteford, Washington cou sel for Braniff, contended, on the oth hand, that these smaller cities were e titled to service and that Braniff, whi he asserted was a pioneer in developi air routes in Texas, was the logical carri to perform the service. He said the western cities of Texas had a right to b tied more closely to eastern Texas an that air transportation alone would ac complish this end. He read from th Board's May 10th opinion as follows: "I the application by Braniff which is pre ently before us sought authority to co duct operations over this route for limited period of years, we would ha felt justified in issuing such a certificate."

The second phase of the hearing de voted primarily to the application of Es sair, Inc. for feeder-pick-up routes in wes ern Texas, brought forth sharp exchange between opposing counsel and O. R. Mc Guire, Essair counsel, over the latter's remarks concerning the Board's delay in handing down a decision. The Essair application, covering some of the stops on Braniff's and Continental's routes, was filed in 1939 for service between Amarillo and Houston, via Lubbock, Big Springs, San Angelo and Austin, or an alternate route through Brownwood and Abiline.

The Board had deferred a decision, it was claimed, so as to make a complete investigation of the feeder-pick-up problem. McGuire said the Board could redeem its pledge to the U. S. Senate when it promised to give attention to the applications of non-existent carriers. He said Essair had suffered much, financially and otherwise, through the Board's indecision. Public counsel and opposition attorneys vigorously defended the Board's decision to study all phases of the feeder-pick-up situation. They contended Essair was trying to establish a secondary airline and public counsel said its application was not essentially a feeder-pick-up because it proposed to serve most of the same cities that are asked for by the larger transcontinental companies.

Aviation Industry's Vision, Daring Cited By President of PC

Postwar America must be built on t vision and daring of the aviation indus C. Bedell Monro, president of Penns vania-Central Airlines, told members the Junior Board of Commerce of Wa ington, D. C., recently.

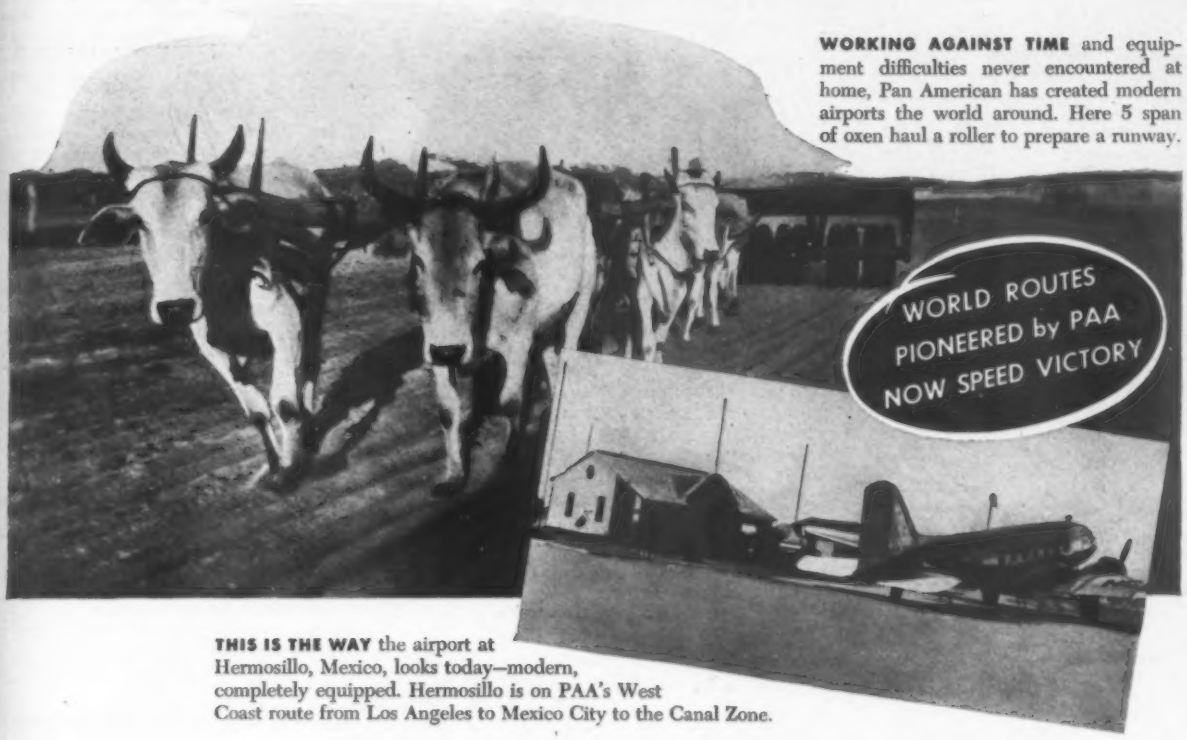
"The vision and daring of the aviati industry must be utilized in planning a world of work relief, charity and u employment compensation, but a wor that glories in the building of a new life far better, far more consecrated, far m advanced than any Americans have y conceived," he said.

"Government cannot do it. It m stem—with the sincere, active, and whol hearted cooperation of government—fr the productive genius of American indu try. Government ownership and manag ment, in whole or in part, or cartels m monopolies cannot accomplish the tas American business, free to compete a thus free to invent and develop, can a must be the motivating genius behind th brave new world," he added.

AA Flies Vital Cargo to Mexico

Fitting highlight to American Airlines' celebration of the first anniversary of its service to Mexico City was the job given the company of rushing badly-needed replacement parts from Philadelphia to Monterrey, Mexico, for the huge 16,000 kilowatt turbo generator of the Monterrey power plant. The company flew a total of 6,000 lbs. of parts needed to re-establish power and light to the city. American's new all-cargo flight made a special landing at Philadelphia to take on board the last shipment which totaled 1,259 lbs. Photo shows loading one of the shipments.

IN THE FOREIGN FIELD . . .



WORKING AGAINST TIME and equipment difficulties never encountered at home, Pan American has created modern airports the world around. Here 5 span of oxen haul a roller to prepare a runway.

THIS IS THE WAY the airport at Hermosillo, Mexico, looks today—modern, completely equipped. Hermosillo is on PAA's West Coast route from Los Angeles to Mexico City to the Canal Zone.

MOTIVE POWER IS WHERE YOU FIND IT

IN the United States spans of oxen pulled many a covered wagon across the Great Plains to California in '49 . . . Now they are just pictures in a history book.

But in the foreign field, Pan American is still pioneering under difficulties just as great as faced the forty-niners. Oxen, burros, natives with packs on their backs—all are still pressed into service for transport and for motive power in building modern airports. When machine equipment cannot be brought in, work goes ahead *just the same.*

At Hermosillo, the land was made available by the Mexican Government. Thousands of dollars were spent by Pan American's affiliate, *Compañía Mexicana de Aviación,* which now operates the airport . . . And there is nothing unique about this achievement. It has been duplicated by Pan American many times over in the last 15 years—in Alaska, Africa, China, on desert islands and the world around.

• • •

Without exaggeration, it can be said that the existence of routes pioneered by Pan American has saved the United Nations' aerial war transport many long months—maybe even years.

Wings over the World

PAN AMERICAN WORLD AIRWAYS

BUY WAR BONDS

CAB Reports Cause of Panagra Accident

Failure of the pilot to observe the company's instructions against blind flying in the overcast was found by Civil Aeronautics Board to be the probable cause of an accident involving a Pan American-Grace Airways plane near Chaparra, Peru, on Jan. 22, 1943.

CAB's report said that the evidence showed the pilot was aware of the company's instruction with reference to blind flying. The Board listed as contributing factors the "absence of adequate flight dispatch control by the company and failure of the company to inaugurate and maintain written flight and operating procedures in such form as to be constantly available for guidance of pilots and dispatchers."

The Board found that "the flight was normal until it encountered weather, which, on the course the pilot elected to take, necessitated instrument flying; the flight was continued on instruments, contrary to company policy." CAB further stated that on at least two occasions, Civil Aeronautics Authority had expressed to Panagra the advisability of Panagra's publishing a flight route manual for guidance of its pilots and dispatchers. This had never been accomplished and instructions concerning flight procedures were given orally to new pilots, the Board stated.

The plane involved was a Douglas DC3A. Four members of the crew and 10 passengers were killed, while one passenger escaped with serious injury.

AMEX Financial Report

American Export Airlines, Inc., has reported to stockholders a net profit after taxes of $32,817 for 1942. The earned surplus at Dec. 31, 1942 was $107,249 resulting from direct credits of $74,431 and the transfer of the net profit for the year.

W. H. Coverdale, Export's president, stated: "Experimental and development costs at Dec. 31, 1942 amounted to $1,510,321. No amortization of these costs has been charged to income for the year. Our liability to American Export Lines, Inc. (parent company at the year's end, was $1,496,583 consisting of $1,000,000 borrowed on open account under the terms of an agreement dated March 1, 1940, and $496,583 representing other current advances.

Coverdale further told the stockholders that "the year 1942 was the first year in which your company has had any commercial operations. Due to the nature and scope of our activities in the war effort, we are unable to submit more than a brief summary of the operating results."

Western Adds Flights

Western Air Lines recently added four new flights to the Los Angeles-San Diego-Salt Lake City division of its California to Canada route in a move to relieve traffic congestion due to war demands. Los Angeles patrons now have an additional Los Angeles to San Diego daily round trip schedule, making six western flights daily, and an additional round trip transcontinental schedule via Salt Lake City. Another 21-passenger Douglas DC-3 was added to meet the new schedule requirements.

THE SKY IS NO LIMIT

There is only one way for any builder of an airplane engine to approach his job, and that is to make each part as fine as he is able to make it. ★ But in achieving this goal, Allison started with two special advantages. ★ One was the opportunity of drawing upon all General Motors' "know-how" in the perfection of manufacturing techniques. ★ The other was a privilege which had been ours for many years—the privilege of concentrating on assignments calling for high skill and precision in working with metals. ★ Perhaps we are aiming high, but with two such advantages it is natural our aspiration should be to seek to build ever finer aircraft engines.

POWERED BY ALLISON
P-38 — Lightning
P-39 — Airacobra
P-40 — Warhawk
P-51 — Mustang

LIQUID-COOLED AIRCRAFT ENGINES

Allison

DIVISION OF GM GENERAL MOTORS

SKYLINES

by C. Bedell Monro

President, Pennsylvania-Central Airlines

★ ★ ★

SHORTER AIRLINE HAULS

Seldom a day passes without new and broader predictions of post-war aviation —100-passenger planes leaving every hour for faraway places like Bombay and Vladivostok.

We hear very little, however, of the man in Cumberland, Maryland (Pop. 40,000) who will want to fly to Pittsburgh, 145 miles distant—nearly four hours by train or auto, less than 30 minutes in post-war passenger planes.

Pittsburgh is on three airlanes, but planes pass Cumberland by and the traveler is without adequate transportation.

While we of the aviation industry are looking ahead, many of us bear in mind that there are comparatively few people who will want to go to Bombay or Vladivostok, but many in Cumberland (and the hundreds of Cumberlands the country over) who will want to go to Pittsburgh, or other cities nearby.

It may be unprofitable in the first few years after the war for large express airlines to stop in cities like Cumberland, but not many years ago it was also unprofitable for airliners to fly between metropolitan areas.

We surmounted the problem by gradually improving the ratio between operating costs and load factor. We can find the answer to the problem of serving more of our smaller cities if we give it our best efforts.

Post-war airlines across the oceans will promote international good will, but we should not let them submerge our planning for our forgotten cities.

Aviation has demonstrated that no route is too long to fly. But it is important that we demonstrate that no route is too short to fly—as we shall in the days after the war.

Pennsylvania-Central Airlines, National Airport, Washington, D. C.

(Advertisement)

Traffic

NORTHEAST AIRLINES, Inc. passenger business between Boston, Presque Isle and Moncton, New Brunswick, Can. showed a 32% increase in July over the corresponding month last year. Cumulative figures for seven months ending July 31 also showed that the number of passengers carried had increased 4.95% over the corresponding period in 1942.

NORTHWEST AIRLINES, Inc. carried 8,369 passengers during July—an increase of nearly 400 over June. Its planes flew 5,486,714 passenger miles, an increase of 289,124 over the previous month.

BRANIFF AIRWAYS, Inc. over its Great Lakes to the Gulf system showed a 186% increase in the volume of air mail carried in July, 1943 over July, 1942. The airline carried 532,056 gross pounds as compared to 201,811 pounds. The number of mail pound miles flown during July, 1943 was 209,950,419 compared to 73,932,000 in July, 1942. The increase in express pound miles flown was 73,991,039 as compared to 30,785,000. Pounds of air express were up 94.18% according to comparative monthly figures. Braniff carried 4,181 more passengers in July of this year than last, or 14,632 as against 10,451—an increase of 40%.

TRANS-CANADA Air Lines showed a mail load for July of 316,547 pounds, an increase of 7,438 pounds over June and 123,576 pounds over July a year ago. Passengers numbered 13,468, an increase of 852 over June and 4,028 over July, 1942. The express load was more than double that of a year ago, rising from 33,323 pounds to 73,994, an increase of 40,671 pounds. The increase over June was 2,371 pounds.

TRANSCONTINENTAL & WESTERN AIR, Inc., reports an increase of 132% in the number of pounds hauled in July as compared to July, 1942. Preliminary statistics revealed the airline had transported 1,583,065 pounds of airmail in July of this year, as compared to 681,795 pounds in the same month last year. The figure marked a 4.69% increase over June, 1943. Air express shipments increased 55% over July, 1942.

Mediation Board Denies Joint AA-ALMA Petition For Mechanics' Raises

An application for mechanics' wage increases filed jointly by American Airlines and the Airline Mechanics' Association, has been denied by the National Mediation Board.

The American Airlines case was the first of a series of 11 airline mechanic cases scheduled for review by the board. Letters informing other companies of the board's disposition to wage increases are going out continuously, W. T. Nolte, assistant to the board's chairman, reported.

The board considers the applications informally, he said, to determine whether the adjustments requested are in line with the nation's wage program, at present based on the "Little Steel" formula.

Airlines turned down on their original application have the alternative of revising their requests, but no recourse to any other agency of the government, Nolte said.

"As a hypothetical example, an airline at present paying a certain class mechanic $1.20 an hour which requests an increase to $1.35 an hour and is turned down, may re-submit an application seeking an increase, say, to $1.30 or $1.25 an hour," he explained. "Any change in the nation's over-all wage program would, of course, change the disposition of the board to airline mechanic and other cases."

Chairman William M. Leiserson told *American Aviation* that the board is "continuously" considering applications from airlines for wage adjustments for various types of employes, some of the applications involving only a handful of employes, but that a series of cases involving mechanics have accumulated and are now being considered together.

Opening A New Air Route

Capt. Hakkenberg Gaasbeek, head of pilots for K.L.M. Royal Dutch Airlines, is shown being congratulated at Miami after completing the first flight over the line's Miami-Curacao route, newest airway connecting the Americas. Left to right—(in left background) S. Olivar of Air Express International, K.L.M. agents at Miami; M. E. A. L. De Jong, vice president and acting director of the airlines; T. M. van den Stempel, Netherlands consul; Rear Admiral Meyer Ranneft; Wireless Operator Groeneveld; Second Pilot Langenberg; Capt. Gaasbeek; Engineer Bak; Lt. W. W. Gibbs, U. S. Navy; and Lt. Col. R. C. Hornsby, U. S. Army. All flights have been booked solidly through September on the new route.

UAL Nets $1,170,622 in Second Quarter

W. A. Patterson, president of United Air Lines, credited heavy war-time passenger, mail and express traffic on regular schedules for the company's showing of a net income of $1,170,622 for the second quarter of 1943.

Earnings, according to Patterson, were equivalent to 78c per share and compared with a net income of $739,297, or 49.3c per share for the second quarter of 1942.

The company operated 10.6% more revenue passenger-miles, 73.8% more mail ton-miles and 11.9% more express ton-miles during the second quarter of this year than in the corresponding period in 1942. The gains were realized despite the fact that there was a 10% decrease in the revenue airplane miles flown on the company's scheduled services, caused by the acquisition of a substantial number of airplanes by the government for military service.

The showing was possible, Patterson said, through more effective use of the company's equipment, plus improved maintenance methods. Approximately 89% of the company's total weight-carrying capacity on all flights was utilized during the second quarter of 1943 and on its continental route load factors ran as high as 94%.

United's president expressed the hope that, "with a continued insistent demand for additional air travel facilities the armed forces soon would permit the allocation of more planes to commercial service. The opinion seems to be widely held that such an allocation of additional equipment would aid the prosecution of the war."

Revenue passenger-miles flown by United in the second quarter totaled 88,120,131 as compared with 79,679,196 for the corresponding quarter of 1942; mail-ton miles totaled 2,547,593 as against 1,465,716 for the same period a year ago; express ton-miles totaled 982,454 as against 877,630, and, revenue plane-miles were 5,290,267 as compared with 5,877,447 for the second quarter of 1942.

Patterson's report called attention to United's action, along with other air lines, in reducing passenger fares by about 10% and also to the reduction in air express tariffs, averaging approximately 11%, effective July 15. Had these been in effect during the first half of the year, they would have caused reductions of approximately $860,000 in passenger revenues and $150,000 in express revenues for the period, he said.

The purely financial aspects of the report showed that total operating expenses for the three months ending June 30, 1943 compared with the corresponding three months of 1942 (in parentheses) were as follows; Total operating revenues $6,940,707 ($5,915,931); total operating expenses and taxes $5,149,517 ($4,696,128); net earnings from operations $1,791,190 ($1,219,803); net income on Army contracts (before income taxes) $107,006 ($55,905); income from misc. property, interest, etc. (net) $34,638 ($12,211 loss); federal taxes $762.212 ($524,200); net income $1,170,622 ($739,297).

Similar comparisons between the six months ending June 30, 1943 with corresponding period in 1942 follow: total operating revenues $12,710,062 ($10,435,016); total operating expenses and taxes $9,140,409 ($9,062,361); net earnings from operations $3,569,653 ($1,372,655); net income on Army contracts (before income taxes) $282,623 ($98,236); income from misc. property, interest, etc. $45,336 ($392 loss); federal taxes $1,744,212 ($588,200) and net income $2,153,400 ($882,299).

The report explains that the federal income tax provisions for 1943 have been computed at the rates provided in the 1942 Revenue Act. No provision has been made for excess-profits tax since the company does not anticipate that it will be subject to such tax for 1943 under existing laws. However, application of the effective excess-profits tax rate would increase the Federal taxes (net of post-war refund of excess-profits tax) to $1,343,845 for the three months ended June 30, 1943 and to $2,916,487 for the six months ended June 30, 1943, and would reduce the net income to $588,989 (39.2 cents per share) for the three months ended June 30, 1943 and to $981,125 (65.4 cents per share) for the six months ended June 30, 1943.

UNITED AIR LINES TRANSPORT Corp. announced a 16% increase in mail pound miles flown during July over July, 1942. It's planes flew 1,822,295,000 pound miles in July to exceed any previous month's total by 38,634,000. A 15% increase is represented by the 786,864,000 express pound miles flown in July over June which was a four percent jump over July a year ago.

TRANS-CANADA AIR LINES announces that during the first half of 1943, air mail carried was double the amount carried during the corresponding period of 1942. During the same corresponding period, three times as much express was carried and 17,000 more passengers used Trans-Canada Air Line planes.

Airline Commentary

Dockets at the Civil Aeronautics Board have finally passed the 1,000 mark . . . Everything that comes into the Board's docket section—new route applications, rate cases, interlocking directorates, etc.—receives a docket number . . . So now, five years after establishment of the Civil Aeronautics Authority, the docket numbers are in four figures . . . Appropriately enough, in these days of innumerable new route applications, the "honor" of being docketed No. 1,000 went to Arkansas Motor Coaches, which is seeking—you guessed it—new air routes . . . We tried to find out who had docket No. 1, but even the CAB isn't exactly sure . . . Braniff Airways was assigned that number back in 1938, when it filed its "grandfather" application and some new routes, but which of its applications was first isn't certain . . . Anyhow, all of Braniff's proceedings were filed under that number . . .

●

Last fortnight Terrell Drinkwater celebrated his first anniversary as head of Continental Air Lines . . . He took over when Bob Six went into the Army as a major . . . Terrell has done one of the outstanding jobs in the industry, and we extend to him our congratulations on his first anniversary . . .

●

We were interested and amused by a recent article by Robert P. Holley in the Chicago *Daily News* . . . He discussed the airlines' planning for the postwar period, called attention to the flood of route applications, pointed out that lack of equipment is a problem, etc. . . . Then, discussing the postwar, he said: "The full limits of the publicity gag angle haven't been reached as yet. We still have to look forward to a number of 'firsts.' Undoubtedly, there will be contests to pick the first stewardess for the first flight to Vladivostok, the pilot of the ship, the co-pilot, radioman, navigator and other crew members. Then aside from the personnel angle, who will have the honor of sending the first air mail cover to Tokyo? To what person will fall the honor of dispatching the first air freight shipment to Moscow?" . . . Sounds interesting, but let's get the routes first . . .

●

Last issue in this column we described Pat O'Malley as the gal who "handles a little publicity here and there for TWA" . . . It seems that our readers (evidently there's more than one) have been giving Pat the "bird" over this description . . . So we humbly retract, and re-describe her as the gal who does a lot of publicity everywhere for TWA . . .

●

Likeable Bob Bias has resigned as assistant to CAB Chairman L. Welch Pogue to go with Lockheed, and his job has been taken over by James Francis Reilly, who comes to the front office from Ed Leasure's staff of examiners . . . Jim Reilly has done more than a capable job since joining the Board in 1940. is well liked in the industry, and the choice is an excellent one . . . And there's never a dull moment when Reilly's around . . . He has a sense of humor . . .

●

Exactly what will happen on getting more planes for the airlines seems to be anyone's guess . . . Most people who should know insist they have heard of no change in the plan to give the airlines back about 24 planes by year-end . . . However, one high official to whom we talked was a little apprehensive that lack of action since the story about 24 planes leaked out might mean that some changes had been made . . . Probably the best thing for the airlines to do is not to expect planes until they see them sitting in the hangar . . . But it seems too bad that they haven't been told definitely what they will get and when . . .

E. B.

Today Military airpower is bursting through the hampering web of traditional thinking as war-born achievements sketch the tremendous pattern of the future. National Airlines today is aware of this pattern and even while energetically serving the war effort is planning to serve equally well in the bright new world of tomorrow.

Tomorrow National Airlines will apply the lessons learned from war to the furtherance of human progress . . . annihilating space with the swift wings of giant, multi-motored passenger and cargo planes . . . bringing the blessings of air transportation to regions hitherto without it . . . creating shining opportunities for men who are now fighting for their country and who will, inevitably, never again be willing slaves to time and distance.

NATIONAL AIRLINES

NATIONAL AIRLINES

The Buccaneer Route

Sky Chefs, Inc. Helps Solve the Airport Food Problem

GETTING A DECENT MEAL at a reasonable price within a reasonable length of time is a problem which has confronted everyone who has ever had to wait over for a train or plane connection at mealtimes.

The major airlines partially solved the problem for their passengers in flight long ago by serving complimentary meals on board, but the hungry passengers waiting at the small airports throughout the country either had to go hungry or take what he could get, for airports in the United States are still located far from the main streets of the cities they serve.

The Sky Chef

Furthermore, sometimes the complimentary meals left much to be desired in the old days when the airlines were dependent on airport concessions whose primary interest was in making money and not in giving that added service to passengers and patrons which has been almost a creed with every airline in commercial service. Airlines also often paid exorbitant prices for the food which was put on board their planes by these same concessionaires.

A few airlines solved the problem by installing kitchens at key airports, where the rights granted the concessionaire did not conflict with such installation. About four years ago, for example, American Airlines came to the rescue of the hungry, waiting travelers in two of the cities where they were already preparing meals to put on board their planes—Nashville and Cincinnati, both of them important junction points for East-West and North-South traffic.

Organized in 1942

In February, 1942, Sky Chefs, Inc. was organized to operate restaurants in airports where passengers might be forced to wait for connecting planes and where meals were also put on board. It was symbolized by the gay little figure, designed by James Gordon Carr, which is fast becoming a symbol of good food, good service and reasonable prices to everyone who has patronized them.

Sky Chefs is a wholly owned subsidiary of American Airlines but operates entirely separate from the parent company. Only one member of the board is also an officer of American Airlines. The management, supervision and records are exclusively Sky Chef problems.

Sky Chefs was organized with the avowed purpose of providing quality meals for passengers and, at the same time, clean, attractive and adequate restaurant facilities for the airlines employes at the airports. There was the hope, too, that these airport restaurants might become a rendezvous for people who were interested in aviation and wanted to watch the show, just as they did in Europe for many years before the war. The combined restaurant and plane meal kitchens had already proved more economical in the cities where they had been tried, both from the point of view of management and from the point of view of utilization of food.

Impartial Service

Sky Chefs has made it a policy since its founding to render impartial service to everyone using its airport restaurant facilities. No special privileges are granted any one tenant that are not given to the others. Any airline has the privilege of installing a kitchen for the purpose of preparing its own plane meals. No advertising of any kind by any airline is permitted in any Sky Chef restaurant.

Some of the restaurants now operated by Sky Chefs were already in the terminal buildings and have been redecorated and equipped to meet the standards set up by the company. Some of them are new. Only one, to date, is housed in a separate building, that in Phoenix which was completed by Sky Chefs early this year in a Spanish-style adobe building to match the airport administration building. There are 15 Sky Chef restaurants in all now operating—in Buffalo, Burbank, Cincinnati, El Paso, Fort Worth, Hartford, Knoxville, Little Rock, Nashville, Philadelphia, Phoenix, Tucson. Tulsa, Baltimore and Oklahoma City. All are open to the public except the latter two, which are for the time being restricted for military reasons to actual airline passengers and airport employes. The restuarant at Burbank is at Lockheed airport, but is not the main airport restaurant.

Serves Airlines

Plane meals are provided at several cities to Delta, Pennsylvania-Central, Braniff and Transcontinental and Western Air, as well as to American Airlines, for whom Sky Chefs supply approximately 60% of the 1,800 meals served every day. Plane meals follow the menus worked out by the various airlines.

Menus are standardized to the extent that model menus and recipes are sent out by the central office to all the restaurant managers. The latter, however, are in complete charge of their own restaurants and also do all their buying locally. Consequently, local dishes are always featured, and local supplies determine, especially in these rationed days, which foods appear most often on the menus. The personnel is local, even including the restaurant manager, provided one can be located who has had sufficient previous restaurant experience. The supervisory personnel is in the New York office, theoretically, but they are keeping a close watch on their already far-flung system, and much of their time is spent in the field. Mrs. Martha Roland, a trained dietitian, who plans the menus and furnishes the recipes, is also a general trouble shooter for the organization and spends much of her time in the restaurants helping the managers to keep them functioning smoothly.

Decorations have been standardized, as everyone knows who has eaten under the aegis of the ingratiating little presiding spirit which appears on Sky Chef letterheads, menus, china and the matches given away with cigarettes purchased in the gift shops which are operated in connection with the restaurants. Blue walls; grey drapes with a silver "S" woven into the fabric (not a dollar sign, says John W. Snakard, Vice President and Treasurer); gay counter tops which are a cross between orange and Chinese red; blue leatherette stool tops; Venetian blinds at the windows. Jimmie Carr is also responsible for the decorative scheme. The china presented one of the most difficult problems but after several attempts, the Syracuse China Company produced the very handsome Sky Chef china which was put into service on September 1 of this year.

NWA's Method

Northwest Airlines is probably the first airline in this country to advertise for employees with street car ads on which are pasted forms which prospective applicants can tear off and fill out before applying for a job. The car placards emphasize the type of war work being done by NWA and give details as to how to apply. Company reports the car ads are bringing results.

Phoenix Seats 100

Some of the restaurants have counter service only; others have tables as well. The largest, in Phoenix, seats about 100.

For the traveler who has forgotten his shaving kit or his toothpaste, his writing paper or a gift for his little boy or his girl friend, or who just wants a magazine to read while he is waiting, a gift "shop" is run in connection with the restaurant, usually at the counter but sometimes separately in the lobby of the airport. Buying for these "shops" is done locally, and every attempt is made to keep on hand the things which people ordinarily ask for—plus a few attractive gifts to catch the eye and tempt the pocketbook.

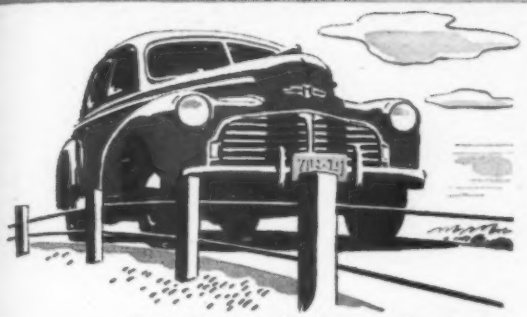
Affected by War

Starting a venture like this in war times has not been all clear sailing. Some of the kitchens are electrically equipped; some have gas, depending largely on which is available in the market. The shortage of gasoline and the curtailment of pleasure travel at the present time has limited the patronage largely to people who are actually passengers, or to personnel employed at the airports. Labor conditions and the general food situation have made it difficult to attain the standards which Sky Chefs has set for itself. That, however, is not a problem which is peculiar to Sky Chefs—it confronts every restaurant owner in the country.

When the skyport of tomorrow becomes the community center which its planners hope it will be, Sky Chefs should have a chance to reap the benefits from the groundwork it is now laying. Backed by ample capital, it will be in a position to assure airport owners a reasonable rent and continuous operation. And, with the cooperation of the airlines which it serves, Sky Chefs should act as a powerful selling agent for air travel.

DELCO RADIOS

"BATTLE-PROVEN" EVEN *BEFORE* WAR STARTED!



Proved on the highways of peace . . .

to serve on the battlefields of war

Vibration—shock—intense heat and cold . . . Delco radios have been meeting these "war conditions" for years

The physical beating dealt out to radio sets used in tanks, tank destroyers and other *mobile* units is old stuff to Delco Radio engineers. For years, Delco Radio has been a leading manufacturer of automotive radios . . . having solved such problems as shock—vibration—heat and humidity—extreme cold—electrical interference. True, such punishment is more intense on vehicles of war . . . but actually they're the same old problems that Delco researchers had to lick to make automotive radio practical.

The important point today is not that Delco Radio pioneered and developed automotive radios to equip America's leading cars. What is significant is that this experience in vehicular radio problems has enabled Delco Radio, in cooperation with military technicians, to provide efficient inter-vehicle radio communication quickly.

The experience Delco Radio has gained down through the years thus helps speed the day of Victory . . . after which it will help enrich the days of Peace. Delco Radio Division, General Motors Corporation, Kokomo, Indiana.

Delco Radio
DIVISION OF
GENERAL MOTORS

★ ★ ★ ★ **BACK THE ATTACK—WITH WAR BONDS** ★ ★ ★ ★

'Ideal' Airport Plan

(Continued from page 40)

Municipal Airport's 37 per cent. These ratios are based on a 200 ft. width for runways and a 100 ft. width for taxi strips.

"The possible question that the center operations base might constitute a danger to operating aircraft can be answered as follows:

"In studying the Master Plan (see Page 39), it is easily recognized that any landing aircraft coming in on one of the two runways of the smaller square will be under perfect control the moment it reaches the first intersection. Aircraft taking off in the same wind direction are still 'controllable' when passing the 'nearest' point to the operations base.

"It might be interesting to note that the distance between the edge of the center apron and the boundary of the field is a minimum of about 2,500 feet. This should be ample space for any emergency landing in any direction.

"The present tendency in airport construction is to protrude the operations base toward the center of the field. This would appear to be dangerous for the following reasons:

"1. Present day airports are smaller than the airport here proposed.

"2. The V-shaped base forms a much greater block of obstruction than the comparatively small operations base proposed.

"On the proposed airport the center space is large enough to allow for the building of a loading platform to accommodate 20 aircraft with ample room for apron and taxi surface. Hangars may be placed at the edge of the field where repair work, warming up of motors, and major check-ups can be made without interference and annoyances at the administration building.

"The cost of the underpass for passengers, mail, and freight from the boundary of the field to the center operations base will about equal the cost of the construction of approximately three miles of taxi strips 100 feet wide (185,000 square yards) similar to those of the Chicago Municipal Airport.

"The suggested design definitely proves one thing: the operations, namely, landings, take-offs, and taxiing, are absolutely separate from each other. In any given wind direction, one will find a perfect operating unit between two runways in which landings, take-offs, taxiing, and base service may be performed. No aircraft actually in motion will ever have to cross the path of any otherwise operating aircraft. In this way, any possible points of danger are eliminated. By 'staggering' these parallel runways the operators of outgoing and incoming aircraft will find a larger airspace for their respective maneuvers because of the larger radius.

"The operations base is quickly reached (700 feet of taxiing) and, since circular, is easily accessible without interference by hangar aprons filled with idle aircraft. Refueling can be accomplished quickly and without friction by portable fueling units.

"The center operations base can accommodate only a listed number of ground vehicles. The establishment of a shuttle service, however, through the underpass will take passengers and spectators to the operations base. Cars may be parked at the boundary of the field. For a field of such size and capacity, it may be advisable to establish a fast rail service from the center of the city to the airport, thus avoiding congested highways.

"Aircraft using the airport's hangar facilities can easily reach these facilities by following the general course of aircraft enroute to their takeoff points (intersections), without interfering with other operations."

Head United's Training Center

United Air Lines' training of Army pilots for the Air Transport Command at the company's Denver training base is in the hands of these instructors. Left to right—C. S. Doyle, senior chief flight instructor; C. A. Friberg, assistant superintendent in charge of flying; G. I. Myers, superintendent of United's flight training center; and N. T. Messer, Jr., junior chief flight instructor.

PAA Record

Pan American Airways and its Mexican subsidiary, Cia Mexicana, now have 26 arrivals and departures daily at Mexico City, largest in history and making this airport the busiest terminal for Pan American anywhere in the system except for prewar flights at Miami during seasons when Miami-Havana traffic was heavy with tourist business.

American Airlines Official Sees 60-Passenger Limit on Postwar Planes for 5 Years

Radical new designs and huge planes will not appear simultaneously with world peace, said William Littlewood, vice president-engineering for American Airlines, in a recent West Coast interview.

"I feel that during the first five postwar years you will find a 60-passenger limit," Littlewood told *American Aviation*. "Should the war end in 1944, we expect to see such planes as the DC-4, the Constellation and reconverted DC-3's in use for a period of from one to three years."

Such contemplated craft as Consolidated-Vultee's 400-passenger C-99, Boeing's C-97 and the Douglas C-74 will come into general use after that interval, in Littlewood's opinion.

"As for the bright dream of helicopters, we look for practical commercial developments to take another five years. The helicopter today is comparable to automobile development in 1914," he said.

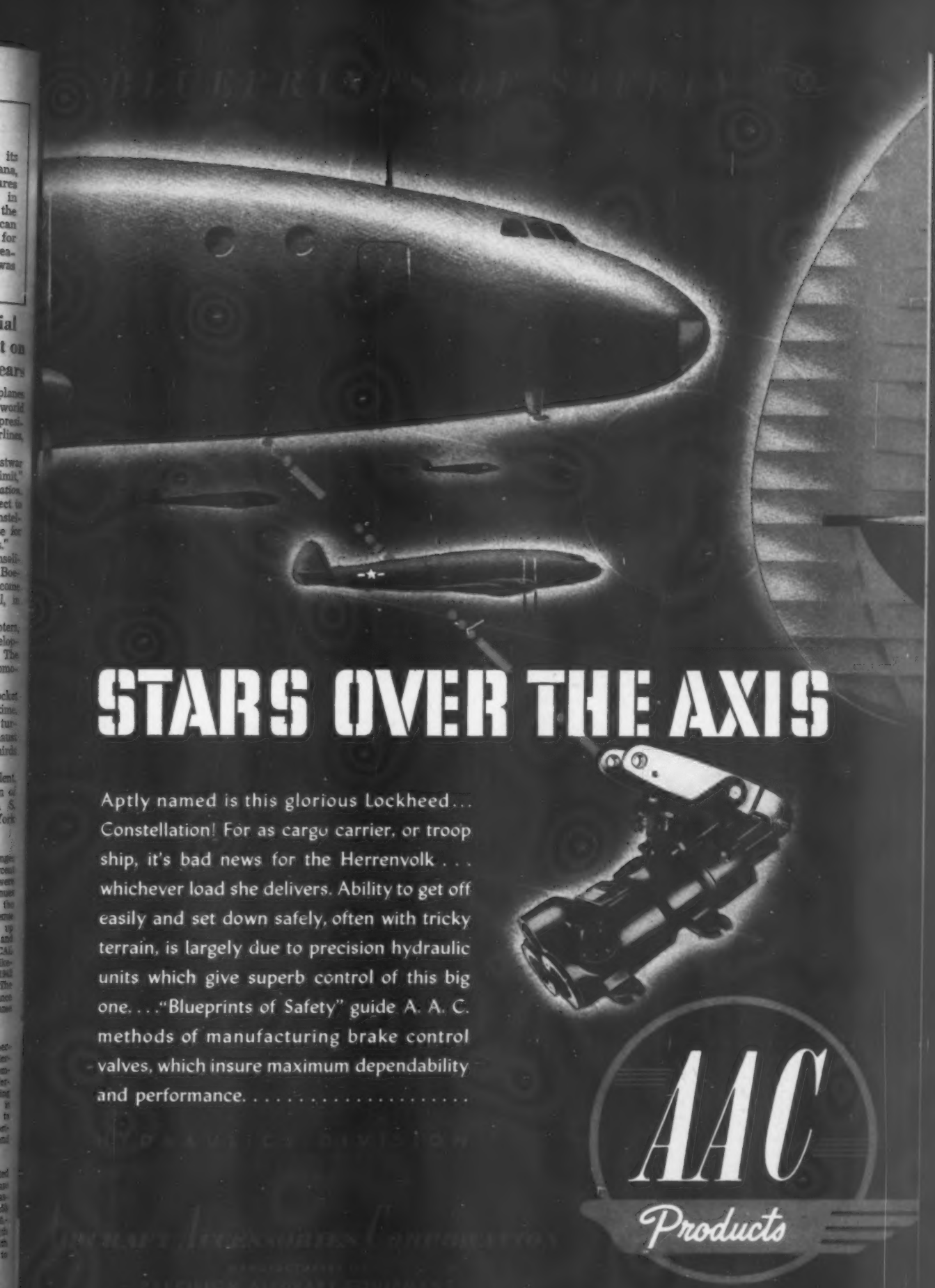
He expressed the opinion that the rocket engine is not in the picture at this time. He looks for early development of a turbine engine which will conserve exhaust losses "which currently use two-thirds of fuel energy."

Littlewood and A. N. Kemp, president, returned from a San Diego inspection of Consolidated-Vultee to greet Ralph S. Damon upon his arrival from New York City.

CONTINENTAL AIR LINES' July passenger revenues showed an increase of 128 percent over the same month last year and were up 4½ percent over June. The July revenues represented the largest income month in the nine years of operation. Passenger revenue miles flown by Continental in July were up 116% over the same month in 1942, and showed a 6½ increase over June. CAL officials said the airline's load factor likewise was up 46% compared with July, 1942 and recorded a 2.8% increase over June. The airline showed 98.73 percent of performance of its schedules in July, up 3% over the same month last year and .5% over June.

BRANIFF AIRWAYS, Inc., through F. Eberstadt & Co. and a nationwide group of underwriters, is offering 400,000 shares of its common stock priced at $12.75 a share. The offering is said to be the largest public financing for a domestic air-transport company and is among the first by a major airline designed to increase capital funds to provide for postwar expansion of passenger, mail, express, and cargo services.

MID-CONTINENT AIRLINES, Inc., reported for July gross revenue of $84,414, an increase of $4,026 over June. During July 803,173 passenger miles were flown compared with 738,853 in June and mail poundage amounted to 20,030,322 in July compared with 739,853 with mail pound miles at 20,030,322 compared with 18,862,522. Express pound miles amounted to 3,289,427 as against 3,174,742.

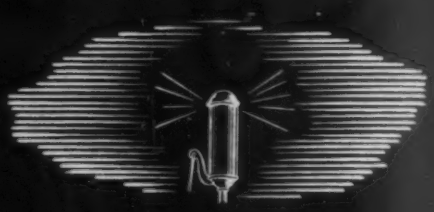


STARS OVER THE AXIS

Aptly named is this glorious Lockheed... Constellation! For as cargo carrier, or troop ship, it's bad news for the Herrenvolk . . . whichever load she delivers. Ability to get off easily and set down safely, often with tricky terrain, is largely due to precision hydraulic units which give superb control of this big one. . . . "Blueprints of Safety" guide A. A. C. methods of manufacturing brake control valves, which insure maximum dependability and performance. . . . . .

AAC

Products



Dare We Speak of Peace?

Yes—because it means so much to all of us individually. With it will come again those products of industry like the car, the radio and the refrigerator, which never were luxuries so much as necessities. And those who are thinking in post-war terms are asked to remember that Weatherhead will be prepared to help build these products again as well as the many strange new ones destined to emerge from this war.

Look Ahead with

Weatherhead

THE WEATHERHEAD COMPANY, CLEVELAND, OHIO

Manufacturers of vital parts for the automotive, aviation, refrigeration and other key industries.

Plants: Cleveland, Columbia City, Ind., Los Angeles
Canada—St. Thomas, Ontario

AA Report for Six Months

Net profit of American Airlines, Inc., for the six months ended June 30, 1943 was $1,359,914, after provision for taxes, the company reports. For the same period in 1942, it was $1,205,318.

After provision for preferred stock dividends, the profit amounts to $2.18 per share on the 574,848 shares of common stock outstanding. The 1942 earnings for the same period amounted to $1.91 per share.

The company's statement, which includes figures for the parent and consolidated subsidiary companies, follows:

	Six months ended June 30, 1943	Six months ended June 30, 1942
OPERATING REVENUE		
Passenger	$11,513,361.28	$10,411,929.03
Mail	2,097,051.97	1,912,280.10
Express	1,303,752.59	623,492.61
Other	338,494.11	348,726.46
	$15,252,659.95	$13,296,428.20
EXPENSES	9,762,604.86	10,039,308.00
GROSS INCOME (before provision for obsolescence and depreciation, interest and Federal Incomes Taxes)	$ 5,490,055.09	$ 3,257,120.20
PROVISION FOR OBSOLESCENSE AND DEPRECIATION	690,140.20	899,101.72
NET PROFIT (before provision for Federal Income Taxes) ..	4,799,914.89	2,358,018.48
PROVISION FOR FEDERAL INCOME AND EXCESS PROFITS TAXES (less postwar refund credit)	3,440,000.00	1,152,700.00
NET PROFIT	$ 1,359,914.89	$ 1,205,318.48

Latin American Airline Operations Studied by PAA

A survey by Pan American Airways System discloses that the network of airlines in Latin America is now two and a half times greater than in the United States. The 44 operating companies there have 750 scheduled stops, compared to 18 carriers in the United States with 260 stops.

Total mileage of the Latin American network is 106,828 miles or 124 per cent greater than was the U. S. domestic network prior to curtailment of services due to the war which was 47,703 miles, says Pan American.

"In schedule frequencies Mexico City leads Latin America with the largest number—109 scheduled arrivals and departures per week. Camaguey, Cuba, follows with 74; Rio de Janeiro, with 71; Buenos Aires, with 56, and Barranquilla, Colombia, with 53," the report continues.

Six airlines in Latin America are in the Pan American Airways System and their total of scheduled miles flown per week are: Pan American Airways, 236,243; Pan American-Grace, 65,490; Cia. Mexicana de Aviacion, 60,356; Panair do Brasil, 52,754; Avianca, 41,441, and Cubana, 18,548. In unduplicated route miles they are: Pan American Airways, 19,738; Panair do Brasil, 11,060; Pan American-Grace Airways, 7,436; Avianca, 6,460, and Cia. Mexicana de Aviacion, 5,322.

"Although the airline network of Central America is only a little more than half as great as that of South America, more frequent service brings the scheduled miles flown per week to within 12% of the corresponding figure for South America," the survey shows.

"Brazil's airline network of 37,728 miles is the most extensive and also flies the most scheduled miles per week—175,013. Mexico is second in length of route miles, 15,890, and in amount of flying per week, 163,200 miles. The West Indies and Caribbean area is third, with a network of 13,092 miles and scheduled miles per week of 122,189."

PCA Managers Meet in Cleveland

A two-day conference of Pennsylvania-Central Airlines station and reservations managers recently was held in Cleveland. Among those attending were: Seated, left to right—R. P. Brinkley, E. C. Penny, G. E. Conroy, Mary E. McCormack, J. W. Stout, Fred Vrnak, Elmer Madsen, T. W. Preston, Charles Hunt. Standing, left to right—W. R. Manchester, Charles Knoble, V. K. Stephens, D. C. Wilt, W. C. Barnhart, J. Cochrane, S. Clark, J. Murphy, R. W. Hardesty, J. Roth, M. E. Cole, and C. J. Miller.

PAA's Flight Schedule for 1948

A TYPICAL 1948 flight schedule has been placed on exhibition in New York's Museum of Modern Art (*Airways to Peace* Section) by Pan American Airways. The schedule follows:

FROM NEW YORK TO:	HOURS IN FLIGHT	ONE WAY	ROUND TRIP
Bermuda	2:40	$ 20.70	$ 37.26
Mexico, D. F. (Mexico)	8:12	61.50	110.70
Balboa (Canal Zone)	9:12	69.00	124.20
Fairbanks (Alaska)	13:00	97.50	175.50
London (England)	13:48	103.50	186.30
Lima (Peru)	14:48	111.00	199.80
Paris (France)	15:00	112.50	202.50
Berlin (Germany)	16:00	120.00	216.00
Rio de Janeiro (Brazil)	19:00	142.50	256.50
Moscow (Russia)	19:12	144.00	259.20
Honolulu (Hawaii)	20:12	151.50	272.70
Santiago (Chile)	21:00	157.50	284.50
Buenos Aires (Argentina)	21:36	162.00	291.60
Cairo (Egypt)	23:12	174.00	313.20
Tokio (Japan)	27:36	207.00	373.60
Bombay (India)	32:00	240.00	432.00
Capetown	34:00	255.00	469.00
Auckland (New Zealand)	37:36	282.00	507.60
Manila (Philippines)	37:36	282.00	507.60
Sydney (Australia)	42:00	315.00	567.00
Singapore (Malaya)	43:00	322.50	580.00
Hong Kong (China)	44:00	330.00	594.00

(Another thing to look forward to in 1948 is the popular use of the 24-hour clock. Flight schedules will become so much a part of the business, social and political life of the world that "air time" will supplant railroad time as completely as the latter supplanted "sun time.")

NORTHWEST AIRLINES reports that a dividend of 50 cents per share on the company's common stock has been declared by the directors. This dividend represents a total amount of $117,460. It is payable September 1 to common shareholders of record as of August 20.

Airline Personnel

Lochiel

Weiblen

Walter A. Nagel, formerly department supervisor of the New York district office of Pan American Airways, has been named assistant to Arthur C. Doyle, U. S. traffic manager of the company. **George E. Wardman** has been appointed assistant to Phil S. Delany, Atlantic Division traffic manager of PAA, and **Charles Cole** has been named to succeed Wardman. Other Pan American appointments: **Matthew T. Geis** to Brownsville, **J. T. Hanainy** to Balboa, **James E. Bradley** to Balboa, **R. J. Steiner** to Brownsville, and **J. L. Williams** to Brownsville, all as airport manager trainees; **Robert G. Sorenson** to Balboa as junior airport manager, **Richard W. Walker** to Barcelona as junior airport manager, **Charles H. Gay** to Brownsville as junior airport manager, **Reynaldo Munoz** to Balboa as airport manager, **E. Earl Mann** to New Orleans as airport manager, **Robert G. Sharp** to Managua as junior airport manager, **Harold C. Blalock** to San Jose as junior airport manager, **George Jean** to New Orleans as junior airport manager, **Roy S. Adkins** to Barcelona as junior airport manager, **Leo A. Price** to David as junior airport manager, **C. L. Jackson** to Turbo as junior airport manager, and **Blake M. Agnew** to Turbo as junior airport manager, **Carlos Goubard I** to Guatemala as assistant to cashier, **Porter Norris** to Mexico City as assistant division traffic manager, **A. R. Segura** to Mexico City as assistant to division traffic manager, **Robert S. Ochiltree** to Brownsville as airport manager trainee, **Clive M. Larson** to Balboa as airport manager trainee, **Emil Bado, Jr.,** and **Paul L. Nelson** to Brownsville as airport manager trainees, **Gordon E. Jaquiss** to La Guaira as junior airport manager, **John H. Fall** to Maturin as junior airport manager, **Alexander H. McKinney** to Maracaibo as junior airport manager, **Richard C. Hawkins** to San Salvador as junior airport manager, **William H. Begg** to Guatemala as airport manager, and **Arthur S. Best** to La Guaira as junior airport manager.

Capt. Enrique Kanter Marroquin, of Pan American's Mexican subsidiary, Cia Mexicana, recently completed 10,000 flying hours, the company announces.

United Air Lines announces the following personnel changes: **E. C. Thomas** has been transferred from Chicago to San Francisco where he will work directly under S. V. Hall, regional vice president in charge of western and Pacific operations; **Frazier S. Wilson** has been named insurance manager at Chicago headquarters; **E. P. Lott** has been appointed director of design, building, and airports at Chicago headquarters; **Robert E. Johnson,** director of advertising and publicity, has been given leave of absence to accept a commission as lieutenant j.g. in the U. S. Naval Reserve.

Jasper M. Rowland has become editor of "Flagship News," the monthly house organ of American Airlines.

Pennsylvania - Central Airlines announces that **Capt. C. W. Weiblen,** chief

Thomas

Wilson

Tomlinson

Johnson

pilot of PCA's western region, has completed 10 years' service with the company. **Ray G. Lochiel,** treasurer and comptroller of PCA, has been elected president of the Washington, D. C., chapter of the National Office Management Association.

Western Air Lines announces: **Ray Grant** has been named traffic manager in charge of mail, express, and cargo; **Woodrow Campbell** is the new supervisor of WAL restaurants and head of the commissary service; **Russell J. Smith** has been appointed superintendent of passenger service and will be assisted by **William Kerrigan.**

James B. Fennell has been appointed station manager at Philadelphia for Transcontinental & Western Air, succeeding **Glenn A. Wise,** who has been transferred to Washington, D. C., as station manager there.

With the opening of Braniff Airways' new route to Denver, the following appointments have been made: Denver—**J. Kernan Weckbaught,** district traffic manager; **W. N. McCaslin,** station manager; **W. H. O'Shea,** agent in-charge. Colorado Springs—**W. T. Wiederhold,**

Kerrigan

Smith

station manager. Pueblo—**R. L. Hoving,** station manager. Braniff also announces appointment of **Robert T. Phinney** of Chicago to the position of Northern Division traffic Manager. His territory embraces Chicago, Kansas City, Wichita, Oklahoma City, Wichita Falls, and Amarillo.

Thomas A. Prevost has been named district traffic manager of National Airlines, Inc., at New Orleans succeeding **Jack Tourtelot,** who has been transferred to Jacksonville, Fla.

Western Airlines announces the appointment of **Robert Leinster** as district manager of passenger service for the company in Salt Lake City.

Northeast Airlines, Inc., reports that **H. Danforth Starr** has been named assistant to the president. **John McA. Reece** has been named assistant director of Northeast's pilot training school at Burlington, Vt., and **Pierce Edmunds** has been named traffic representative in the Boston territory.

R. A. Merkle has been appointed district traffic manager of Colonial Airlines in New York. He was formerly with United Air Lines there.

Continental Air Lines reports that **Jesse E. Hart,** veteran CAL pilot, is preparing for active participation in his third war. A veteran of the Mexican War and World War I, he is now awaiting his commission in the U. S. Army Air Corps.

Continental Air Lines has five new hostesses—three brunettes and two blondes. They are: **Jean Wagner, Jo Anne Hastings, Vivian Lindsay, Shirley French,** and **Betty Bailey.**

Capt. D. W. Tomlinson, USNR, former vice president—engineering for Transcontinental and Western Air, Inc., who has been chief of staff of Naval Air Primary Command since its organization last October, has been ordered to important duty beyond the continental limits of the United States.

Inland Air Lines, Inc., Casper, Wyoming, announces that **G. G. "Jerry" Brooder** is now in charge of all military operations of the company with headquarters in Cheyenne.

George T. Rutledge has been appointed supervisor of planning for American Airlines and will represent the station operations department on the company's economic planning board.

Foley Sees Subcontracting of Maintenance

By E. J. FOLEY

THE SUBCONTRACTING of airline maintenance to service agencies promises to be a definite postwar practice. Increasing interest on the part of operators and the launching of initial service programs by newcomers in the agency field confirm this trend. Maintenance, by nature, is an informal, effective laboratory, from which have come many of the refinements and developments evident in our airliners. Therefore, we should actively consider the consolidation of an airline testing laboratory in this service agency's function.

Foley

The maintenance of flying equipment by another than the operator himself is a practice as old as the air transport industry. We have discussed it before in these columns. Manufacturers and independent agencies both have practiced it and its place in the airline field has been long apparent but never important volume-wise.

Certain operators, reluctant to invest in manpower and facilities to the extent necessary for comprehensive maintenance have resorted to outside sources—oftentimes to the manufacturer of the item itself. Accordingly, our thinking must admit the possibility of manufacturer-interest in servicing his product.

Manufacturers Preoccupied

However manufacturer-maintenance has not always proven desirable. This, by and large, has resulted from the natural and inevitable preoccupation of the manufacturer with making his product. Quite as human and natural, but hopefully less inevitable is the extreme difficulty of finding dispassionate impartiality and absence of prejudice on the part of a manufacturer for his creation. Neither of these factors eleminates the manufacturer as a potential service agent. They merely complicate his entrance and attainment of preeminence in the field.

In our opinion, the airlines swing to extra-company maintenance will be in the direction of agencies totally independent of manufacturer. This is confirmed to some extent by reaction to our earlier discussions on manufacturer-maintenance.

Several such independent "service stations" have been in operation for some time; others are breaking into the field. The latest coming to our attention is the Durham Company of New York City. They have spent the last few months establishing themselves as sales agents for aircraft supplies and accessories. To supplement this sales function, they announce their initial step into the service field—that of small accessory overhaul.

The company's past has been entirely in the field of sales and service. For 30 years, they have been recognized experts in automotive, industrial and marine technical service; how much of this they will be able to apply to the air transport field defies prediction. We hold no brief for their project; their airline clients will be the ones to pass judgment. Both Bob Durham and Gene Goble, who are spearheading this new effort, are service-minded and known to many airline people.

This is a logical place to voice a reminder of the fact that more than desire, interest or enthusiasm is necessary to success in any effort toward airline maintenance "subcontracting." The success of our nation's airline system has stemmed in no small part from the uncompromising standards of safety—safety of maintenance and safety of operation. These standards have developed maintenance as a jealously guarded function of the airline itself—possibly on the basis of "if you want a good job done, do it yourself."

Precision a Prerequisite

We do not imply that it is irrevocably so, but you can be sure that quality and precision, equal to or better than airline standards, will be a prerequisite for getting airline business. A further advantage of cost saving to the airlines through volume maintenance by the agency will undoubtedly be a major factor in operators' decisions.

Now, let us examine the wisdom and advantages of allying an air transport laboratory to our service agency. Those who work directly with the operating parts, engineering and servicing as necessary, are in an excellent position to see the problems involved and to recommend appropriate and *practical* solutions. This fact alone makes the relationship between maintaining and testing a "natural." More than a little in the way of facilities and equipment is interchangeable between the two functions. Otherwise, we might find less testing being done by the airlines themselves.

When we suggested the air transport laboratory here in June, 1942, it was not visualized as a maintenance ally in actual functioning. A joint airline venture, financed on a pro-rata basis solely for testing and development, seemed to be its proper form. Materials, supplies, accessories and all equipment appropriate to airline operation would be tested in this central laboratory.

Uncompetitive by Nature

The reaction to our proposal was one of passive interest. The manufacturer seemed to welcome the idea more than the operators. We suppose this is the logical reaction; the manufacturer is undoubtedly more aware of the problems of scattered, though parallel testing. Further, he is naturally not concerned with the opinion of certain carriers that testing and development work comes under the head of intra-company confidence. So many of these operating and maintenance developments are so uncompetitive by nature as to make us wonder why the airline reluctance.

The situation today shows no improvement over the time of our air transport lab proposal. The manufacturer still finds it necessary to have six test samples of his flap motor with six different airlines—all of which may be located within shouting distance of one another. Simultaneously, six test programs may be carried out, one by each operator; all of which have been designed to prove very nearly the same thing.

It is not improbable that more than half of the programs will never be concluded. Some pressing operating problem may roll in the door and our flap motor maker is left for months to wonder, not only as to the test results but perhaps about what happened to his sample.

All these things add up to extravagance. Yet our suggestion for a single impartial, technically capable organization to correct the situation seems unappealing if we judge from the reaction received. The necessity for moving toward simplification of this air transport testing picture is self-evident. Reluctance to pool talent, time and test results for somewhat obscure competitive reasons seems to be the only impediment.

Accordingly, as an inferior substitute but definitely a step in the right direction, we offer the alliance of airline testing with maintenance subcontracting. The laboratory proper can be established as a logical adjunct to the agency's overhaul shops. With such an arrangement, the individual operator can contract with the service agent for any specific test or series of tests desired. The results can be maintained on a confidential basis and the test procedure and specifications to be met can be established by joint engineering of both parties.

Share the Results!

It is unlikely that only one airline will do business with each service company and economy and expediency can be served where two or more operators agree upon a test program of a single unit and are willing to share the results as provided by their common service and test agent. This concept carried to its ultimate conclusion brings us back to the feasibility of a single, universal testing laboratory.

We would like to have the airlines' reaction again to our old proposal *(Ed. Note: See American Aviation, June 15, 1942)* and on this one. We fail to see any insurmountable difficulties in our original proposal, but that is simply our point of view. It would seem that the amount of close operating, engineering and maintenance liaison between the several air transport operators practiced through the medium of professional societies should have proven by now the desirability of such unification of effort. We wonder what the opinion of all interested parties would be on the possibility of an Air Transport Laboratory as a function of the airline group in the Institute of Aeronautical Sciences. Some airline men we know have complained of the Institute's occasional overlooking of air transport. Would the establishment of such an activity be welcomed by either or both sides?

Lubrication Manual for Aircraft

Standard Oil Co. of New Jersey announces a new Aircraft Lubrication Chart, expected to be a counterpart of the company's "Chek Chart", widely used in automobile service stations. The chart is so assembled that revised pages may be added to it as new lubricants become available or new equipment developed.

Collapsing A Pliofilm 'Raincoat'

A workman in a plant of Curtiss-Wright Corporation's Airplane Division is shown collapsing the 30-foot long, 400-foot square pliofilm "raincoat" covering of a P-40 fighter plane preparatory to shipping it to a war front. The new method, replacing a former procedure of coating plane parts with grease, sucks all air from within the transparent envelope while bags of silica gel substance (shown around propeller hub) absorb any moisture left inside.

"Soloc" Retainer Announced

Solar Aircraft Company, San Diego, Calif., announces a new "Soloc" Retainer, which is a permanent metal holder for "Dzus-type" springs, replacing two rivets and two washers that formerly secured the springs to a plane. The permanent "Soloc" Retainer permits both speedy installation and repair of "Dzus-type" springs, eliminating the use of drills and rivets. Skilled labor is not required for either removing or replacing the springs, nor is there any danger of damage to structure from drilling.

Crash Truck: The White Motor Company of Cleveland is constructing this six wheel, four-wheel-drive crash truck. The principal fire-fighting equipment, supplied by the C-O-Two Fire Equipment Co., consists of ten 100-pound carbon dioxide cylinders and two hose reels carrying two hundred feet each of high pressure, flexible hose with discharge nozzles. This main system is supplemented by six 15-pound capacity extinguishers and an under-seat 100-gallon water tank with pump and 200 feet of hose. A Phomaire clay pipe and two small water type extinguishers complete the fire fighting gear.

Limit Switch for Aircraft

Suitable for use from 95 degrees C. to a minus 40 degrees C. and from sea level to 40,000 feet, this limit switch designed for aircraft applications where space is at a premium is the product of General Electric Co., Schenectady, N. Y. The unit is said to be dust-tight and corrosion-proof and has a contact mechanism of the snap-action, double-break type which gives it a high current rating and makes it applicable where vibration conditions are encountered.

It is a spring-return, plunger operated type unit with a 7/32" overtravel. It can be mounted either on the cover side or opposite. The three different contact arrangements available are: single circuit, normally open; single circuit, normally closed; and two circuit, normally open and normally closed.

Portable Beading Kit

The Parker Appliance Co., 17325 Euclid Ave., Cleveland announces a new portable Tube Beading Kit. The kit is made up of four hand tools: three beader frames —one for ¼", size 4, tubing; one for ⅜", ½" and ⅝" (sizes 6, 8, 10) and one for ¾" and 1" (size 12 and 16) tubing—and a tube holder equipped with replaceable rubber blocks for holding tube during beading. The complete kit is supplied in a black plastic case for bench use or carrying to the job. The tools will bead aluminum, copper or fully annealed steel tubing and the finished bead is said to conform to the requirements of AND 10060.

'Rack Type' Electrical Connector Is Announced

Cannon Electric Development Co., 3209 Humboldt St., Los Angeles, announces the newest of the Cannon DP line of electrical connectors — the DP-B1OC2. This is classed as a rack type connector and adapted by design for radio rack assemblies and any general applications where both plug and receptacle must be fixed permanently in their respective units of equipment.

The DP-B is rectangular; the shell is tapered to effect a close fit when engaged and the two units of the complete connector are self aligning.

The insert insulation is molded phenolic having eight standard contacts of brass, silver-plated and two coaxial contacts of the same material and finish with isolantite insulators. Two contacts are 30 amp and six are 15 amp. Plug weight is .266 lbs.; receptacle, .276 lbs.

Abrasive Wheels, Points

Made by the Flex-Abrasive Co., 100 N. LaSalle St., Chicago, a new line of abrasive wheels and points offer patented construction features that place a fresh abrading surface constantly in contact with the work and permit use of the spiral roll down to the final layers, it is said. Several different types and sizes are for use on alloy steels, wood, rubber, resin and plastics. Mandrels are of tapered thread construction which locks the wheel or point to the shaft by rotary motion.

Anti-Vibration Mounting

United States Rubber Co. announces the development of a new aircraft mounting designed to protect sensitive radio equipment from vibration. One of the features claimed for the new product is its ability to absorb vibration occurring in any of three directions, an important feature when used to mount receivers, transmitters, and electronic equipment.

Plastic Container: To battle moisture and fungus growth in the tropic operations, replacement parts are wrapped and sealed individually in transparent wrapping material, then packed in this rigid transparent Lumarith plastic container, sealed around the cover with moisture-proof, pressure sensitive tape. The container is said to protect the parts against water, grease, mold and poison gas and is not effected by extremes of temperature or humidity. It will not shrink, dry out or become brittle. Lumarith is the product of Celanese Celluloid Corp., New York, N. Y.

Packard-Rolls Royce Engine Explained

PACKARD MOTOR CO. reveals that volume production of a new-type Rolls-Royce aircraft engine incorporating a two-speed two-stage supercharger was started "several months ago." The engine is being used as the power unit of the new North American P-51 Mustang fighter plane.

"In effect, this new engine raises air warfare nearly two miles higher," said George T. Christopher, Packard's president and general manager. "Horsepower is stepped up to more than 1,500. Not only does the engine yield benefits at high altitudes, but its improved performance makes it a greater threat at low ceilings, too."

The supercharger compresses the thin air into a properly compact volume required for admixture with gasoline to form an explosive motor fuel when miles high, doing for an engine what an oxygen mask does for a pilot, Christopher explained.

"The single-stage supercharger does this job well up to a certain altitude," he said, "but centrifugal force places a limit on its revolutions to a point where greater speed would cause it to fly apart. In the two-stage supercharger, the first rotor compresses the air in a fashion comparable to that of a single-stage supercharger. The air is then passed immediately to the second rotor where it is compressed further so that at levels several miles up the air is compressed to six times the surrounding atmospheric pressure. The net result is the maintenance of high power at high altitudes where the enemy has not shown anything similar."

For nearly two years, Packard has been building Rolls-Royce power plants for British and American planes. The new supercharger development is the joint product of British and Packard engineers. The rotor for the supercharger revolves nearly 25,000 times a minute, or at the rate of 867 miles an hour, faster than sound itself, Christopher said.

Alleghany Corp. Buys Up General's Common

All of General Aircraft's common stock has been acquired by the Alleghany Corp., it is reported in eastern financial circles. Details of the purchase price have not been revealed.

General Aircraft, currently engaged in a large glider-building program for the Army, was formed in October, 1939. A few weeks after Pearl Harbor, the company was asked to undertake the production of gliders and the first of these was delivered in September, 1942. With one exception, General has led the field in glider production ever since.

The Alleghany Corp., a holding company, has interests in railroading, trucking, armored cars, coal mining, and coal distribution. It holds a 23.6% direct common stock interest in the Chesapeake & Ohio Railroad Co.

New Retirement Plan

Elastic Stop Nut Corp. announces a new retirement plan providing automatic pensions at the age of 65 for the company's 5,000 employees, with all costs borne by the firm. The plan permits employees to become contributing members of the plan after five years of service, with voluntary contributions used to increase the amount of pension and provide disability pensions and severance benefits.

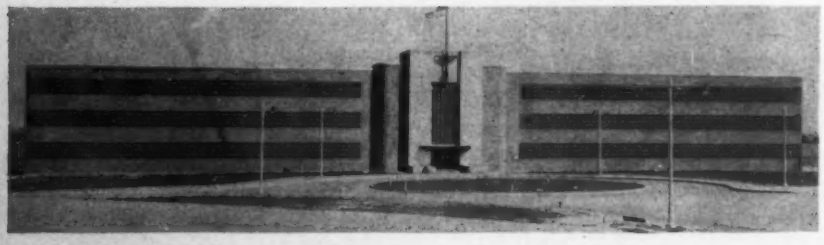
New "Box Score"

A newly compiled "box score" has been released by Curtiss-Wright Corp. showing that Curtiss P-40 fighters have taken a 13½ to 1 toll of the enemy. The figures used in the compilation, obtained from authoritative sources, were based on 50 recent aerial engagements in which 457 P-40's met 1,257 Axis aircraft of all types on every global war front.

In compiling the battle score, which is only a portion of the four-year total combat record of P-40 planes active against the enemy since the Flying Tigers' accomplishments over Burma and China, no consideration was given to reports of enemy planes "probably" destroyed, the company states. Some of the estimates show the Curtiss plane as winner with a margin of 18 to 1 victories.

Mustangs "In Quantity"

North American Aviation, Inc., announces that the latest P-51 Mustang fighter, equipped with the new Packard-built Merlin engine for high altitude fighting, is being produced "in quantity" in the company's California and Texas plants. Decision to equip the Mustangs with the Packard-built engine resulted from the increase in high-altitude bombing by the United States Army Air Forces, said J. H. Kindelberger, president of the company.



Modern as Tomorrow's Planes: Photo shows the new office building at Plant No. 2 of Jacobs Aircraft Engine Co., Pottstown, Pa., striking in its simplicity and incorporating the most modern facilities available.

Bern, Le Duc Quit Hughes-Kaiser Job; Ridley Takes Over

Construction of the mammoth Hughes-Kaiser flying boat is proceeding under new direction following the resignations late last month of Edward G. Bern, general manager of Hughes Aircraft Co. at Culver City, Calif., and John Le Duc, works manager in charge of the cargo project.

American Aviation Daily on Aug. 30 exclusively reported the resignations and revealed that Kenneth F. Ridley, Hughes' chief engineer, had been placed in charge of the cargo project. Resignations followed disagreement at the plant between engineering and production interests.

After assuming direction of the cargo division, Ridley told *American Aviation* that there had been a revision in the schedule on the giant flying boat, but that he was not at liberty to give new dates. Previous schedule called for the first experimental plane by Nov. 15, followed by two flying models early next year. The three planes are being built under an $18,000,000 contract between DPC and Hughes-Kaiser.

Clarifying rumors, Ridley stated that the mammoth wooden assembly building is complete and that production facilities are being moved in. He further stated that engineering work is well along, definitely beyond the 30% mark, as rumored. "We have all necessary equipment and machinery, while retorts and boilers for firming plywood are ready for installation," he said.

Ridley was with Douglas Aircraft for six years before joining Hughes in 1939. He was assistant chief engineer before becoming chief engineer six months ago.

Bern, well known in the aviation industry, was sales manager for Hughes and was located in Washington before becoming general manager at Culver City. He was formerly director of publicity for American Airlines. Le Duc, who was associated with the Emerson Electric turret plant in St. Louis, assumed his position on the cargo project nearly a year ago.

Brazilians To Manufacture Fairchild's Ranger Engine

American aircraft engines will be built in Brazil under terms of a contract signed last fortnight by representatives of the Brazilian government and the Ranger Engine Division, Fairchild Engine and Airplane Corp.

Under the agreement, six-cylinder Ranger inverted in-line air-cooled engines, varying in power from 175 to 200 hp. will be manufactured by Fabrica Nacional de Motores, the recently completed government engine factory, one of the first and largest units in Brazil's program of industrial expansion. The engines will be used to power the Fairchild M-62, now being built in Brazil under a contract negotiated last year; the Brazilian Muniz M9; and the two-engined Grumman Widgeon, now in service in the Brazilian coastal patrol, Amazon military patrol, and mail service.

"Don't Forget . . . Time is what we've always sold– and what we'll have to sell *tomorrow*"

Fast planes in the air—yes, but equally necessary—fast handling and maintenance behind the scenes—on the ground.

Whiting's Collateral Engineering Service is devoted to the development of time-saving equipment for aircraft—equipment to cut short profitless hours in the shop and airport.

At the service of American aviation, Whiting Aviation Division engineers bring to the industry over a half century of specialized experience in solving maintenance, handling, and cargo loading problems.

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• AVIATION DIVISION •

Manufacturing Personnel

McCulloch

Minshall

Lloyd L. Miller, formerly in charge of production control and engineering planning for the woodworking department of Western Electric Co., has been appointed manager of the U. S. Plywood plant at New Rochelle, N. Y.

Aircraft Components, Inc., announces that **Gilbert G. Budwig,** president, has resigned to enter the Marine Corps, aviation division, as a major in charge of administration at the U. S. Marine Base, Cherry Point, N. C.

Higgins Aircraft, Inc., announces that **E. T. Waldo,** former United Press writer, has joined the staff of John H. Jouett, executive vice president.

J. V. Sheehan, formerly industrial research manager for Lockheed Aircraft, has resigned to join the executive staff of Walt Disney Productions, Burbank, Cal.

Delos M. Palmer, dean of engineering at the University of Toledo since 1934, has been appointed plant manager at the American Propeller Corp., subsidiary of The Aviation Corp., in Toledo.

Owens-Corning Fiberglas Corp. announces that **Dr. Ray B. Crepps,** director of Purdue University's materials testing laboratory, has become director of the testing division of the company's research laboratories at Newark, O.

Republic Aviation Corp. announces: **Randolph P. Compton,** formerly vice president of Union Securities Corp., is now associated with the company at Farmingdale, L. I.; **J. Sawyer Wilson,** employment manager, has been appointed training manager and **Howard E. Richards** has been named employment manager.

Lawrance Engineering and Research Corp. reports that **Don McNeil** has been appointed service manager and **Russell Earle** quality manager.

Lowell E. White, formerly test pilot for the Wright Aeronautical Corp., has joined the research engineering staff of the C-O-Two Fire Equipment Co., Newark, N. J.

Ryan Aeronautical Co. reports that **Nathaniel E. Warman,** marine engineer, has joined the company as assistant to the chief engineer. He will be assigned to work on Ryan's new Navy combatant-type plane.

Kurt W. Renson, industrial chemist, has joined the Los Angeles laboratory staff of Turco Products, Inc.

Aircraft Accessories Corp. announces that **Calvin K. Townsend** has been appointed assistant general manager. He was formerly director of contract administration.

George A. Evans, formerly liaison engineer of the Fairchild Aircraft plant at Burlington, N. C., has been named chief engineer, succeeding **Lee H. Worley,** who resigned recently because of ill health.

Denison Engineering Co., Columbus, O., announces that **R. C. Griffith** has been appointed manager of engineering and research.

William J. Conley, former chairman of the engineering department of the University of Rochester, has become a consulting engineer with the Lincoln Electric Co., Cleveland.

McCulloch Engineering Corp., Milwaukee, announces that **R. J. Minshall** has been appointed president and **Robert McCulloch,** founder of the firm, is retiring as president "to undertake a new development vital to the war effort." McCulloch will remain a member of the board and will serve as consultant to the firm.

White

Warman

McNeil

Corpe

Budwig

Renson

Conley

Townsend

Bell Aircraft Corp. announces that **Edward F. Hensley,** an Army flight training instructor, has joined the company as production test pilot.

Rohr Aircraft announces appointment of **Mrs. Isobel White** as publicity and advertising director, succeeding T. C. MacKay, who has joined The Essig Company, advertising agency in Los Angeles.

Lawrence Engineering and Research Corp. announces appointment of **Don McNeil** as service manager. He will retain his present duties as sales and office manager.

Thomas H. Corpe, former general sales manager of the Elastic Stop Nut Corporation of America, has joined Jordanoff Aviation Corp., New York City, as vice president and general manager.

A. C. De Angelis has been named general manager of the Friez Instrument Division of Bendix Aviation Corp., and **N. B. McLean** has been appointed general manager of the company's Marine Division, which has plants at Brooklyn and Norwood, Mass.

Otto W. Timm, president of Timm Aircraft Corp., is celebrating his 32nd year in aviation. Employees of the company recently gave him a large oil portrait of himself.

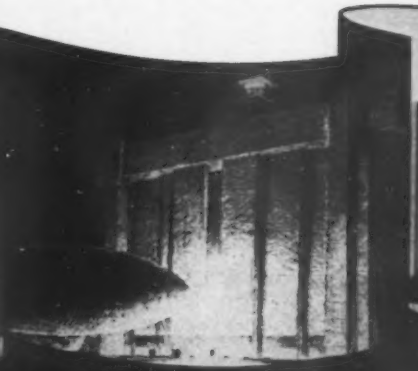
Fairchild Engine & Airplane Corp. announces that **Thomas K. Pierce,** formerly general manager of Dominion Plywood, Ltd., Canada, has been named assistant general manager of its Duramold Division.

Alex B. Marvin has been named assistant to the works manager of Republic Aviation's Evansville, Ind., plant.

Daniel B. Burnett, Jr., has been appointed assistant plant manager of H. J. Heinz Company's War Production Division, which is turning out airplane plywood parts. Burnett was with Ryan Aeronautical Corp. for 20 years.

John Schlegel, for the past 12 years with Pan American Airways, has joined Douglas Aircraft Co., Santa Monica, Cal., to engage in postwar research planning.

BYRNE canopy type K doors . . . for openings of any width and up to 55 ft. high.



BYRNE motorized slide doors 12 stories high . . . used in many Navy dirigible hangars.

BYRNE canopy type B hangar door . . . for openings up to 120 ft. by 30 ft.

BYRNE doors
Serve the Americas . . .
from North to South, Coast to Coast!

A flip of a switch operates BYRNE motorized slide doors for aircraft hangars.

Mammoth dirigible hangar doors . . . 320 ft. by 196 ft. . . . with BYRNE motorized operators.

BYRNE doors for every industrial use . . . crane entrances, movable partitions, shipping doors.

Detroit-engineered . . . Detroit-manufactured . . . doors by BYRNE have for many years served the armed forces and commercial enterprises in all parts of the hemisphere.

Partial list of BYRNE door installations

American Air Lines, Chicago.
Brewster Aeronautical Corp., Johnsville, Pa.
C.A.A., Indianapolis, Ind.
Consolidated Aircraft Corp., New Orleans.
Curtiss-Wright Corp., Columbus, O., and Louisville, Ky.
Fisher Body Division, Cleveland.
Ford Bomber Plant, Willow Run, Mich.
Goodyear Aircraft Corp., Akron, O.
Marine Air Base, Cunningham Field, N. C.
Mid-Continent Airlines, Minneapolis.
Modification Centers, Birmingham, Ala., and others.
Municipal Airports, Albuquerque, N. M.; Great Falls, Mont.; Pittsburgh, Pa.; Providence, R. I.
National Guard Fields throughout the country.
Naval Reserve Bases Gardner, Kan.; Norman, Okla.
North American Aviation, Inc., Dallas, Texas, and Kansas City, Mo.
Northwest Airlines, Chicago and Minneapolis.
Ranger Aircraft Div., of Fairchild, Farmingdale, N. Y.
Republic Aviation Corp., L. I., N. Y.
TWA Hangar, Kansas City, Mo.
U. S. Army Aberdeen, Md.; Barksdale Field, La.; Borinquen Field, P. R.; Dayton, Ohio; Fairbanks, Alaska; Fairfield, Ohio; Middleton, Pa.; Sacramento, Calif.; Tampa Fla., and others.
U. S. Naval Patrol Hangars, Atlantic Coast, North and South America.
U. S. Navy, Alameda, Calif.; Coco Solo, Canal Zone; Guantanamo, Cuba; Norfolk, Va., and others.
U. S. Navy Dirigible Hangars on both coasts.
Vought-Sikorsky Aircraft, Stratford, Conn.

For detailed information, see Sweet's Catalog or consult BYRNE.

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Wages Increased at Boeing Plane Plants

Application of a modification of the SCAI (Southern California Aircraft Industry) plan of job evaluation to the Boeing Aircraft Company wage structure, in its plants at Seattle and Renton, Washington, provides a means for increasing take-home wages of Boeing employes without disturbing the limitations imposed by the former aircraft wage decisions of the National War Labor Board, Washington officials point out.

Although Boeing rates have been higher than those of the Southern California industry plants, they have not measured up to the rates of other industries in the area, particularly those of the shipbuilding companies. As a result, Boeing employes have left for other employment in numbers which finally resulted in a decline in scheduled production.

Under the plan which had been worked out by the War Labor Board for aircraft wage rates on the Coast, there seemed no way to increase Boeing workers' wages to compensate for their difference, until the present arrangement was evolved.

Now, while many employes will not obtain increases, application of the SCAI job classification plan will give skilled and necessary workers a higher standing which will permit a stepped up wage scale for such employes, Washington authorities believe. The type of worker not directly affected will be the trainee or unskilled laborer, who at the present time is usually replacable by available womanpower.

On the other hand, even new workers will be given a better opportunity for earning, for under the plan the hiring-in rate of 67c with a so-called escalation period of 90 days during which wages of new employes were progressively increased up to the minimum rate of 82½c has been eliminated.

A feature designed to hold all present employes is the adjustment which makes the new rate retroactive to March 3, with a payment to be made in an equal lump sum to each employe. The present retroactive payment to each worker is $78 which the Labor Board asks be accepted in war bonds and war savings stamps.

If the plan works out well in these plants, it is expected by Washington observers that a similar standardization of job classifications and pay will be extended to plants in other war production centers where inequality of pay in various industries has caused constant labor turnover.

Form RotaWings, Inc.

Agnew E. Larsen and Joseph S. Pecker, pioneers in rotary wing studies, head a new firm, known as RotaWings, Inc., 200 Madison Ave., New York City, which is devoting itself "completely to the licensing and engineering for manufacturers of helicopters and accessories." The company will be closely associated with the engineering firm of Pecker, Simpson & Gladeck, consulting engineers, and Machine & Tool Designing Co., Inc., engineers, who have just completed the design of a helicopter for Higgins Industries, New Orleans, and Kaiser Cargo, Inc., Bristol, Pa.

Pasadena Becomes Aeronautical Center

Once a winter vacationland for Easterners, Pasadena is rapidly becoming a mecca for advanced aeronautical developments and aircraft precision production as war transforms the Southern California city into a scientific manufacturing center.

Since 1926 the Daniel Guggenheim Graduate School of Aeronautics at the California Institute of Technology has strongly influenced air research and with the advent of war, it was natural that highly specialized production gravitate to the area.

Now there are millions of dollars in contracts carried out by more than 80 firms. The projects vary from the most restricted in the country to output of scientific instruments, optics, aircraft parts and precision tools.

Wallace

Although the full story for many Pasadena companies must wait until war's end, expansion for the aircraft precision tool industry has played an important role in accomplishing mass production in the airframe plants.

Typical is Vard Inc., which since 1940 has tripled its factory space to meet demand for precision inspecting equipment and production tools, such as gages, taps, optical goods, external comparator stands, lathe attachments, dividing engines, aircraft hydraulics and small gears.

Started in 1928 by inventor-engineer Vard B. Wallace, the company grew to its present size from a spare room in the Wallace home, where his drafting machine design was first manufactured for Lockheed engineers.

Wins 'E' Award

Hydraulics and optical departments form an important part of present production which early this year won for the company an Army-Navy "E" followed by a star award. It is also anticipated that with the company's backlog in scientific and technical engineering, Vard will shortly enter the electronics field.

Of special interest to global-minded airlines and military air services is a recently developed aerial navigation instrument, the Vector Course Plotter, greatly resembling Vard's drafting machine. Pan American Airways is already making use of this instrument which computes simultaneously all seven navigation factors.

Associated with V. Wallace is a veteran staff which includes George A. Hand, general superintendent; Henry M. Bray, secretary-treasurer; Russell H. Cole, chief engineer; Homer E. Robinson, vice president in charge of production, and William C. Miller, vice president in charge of optical department, who formerly worked with Cal Tech on the famed 200-inch telescope.

Maker of Air History—

The Douglas "Skymaster"

Installation of nacelle equipment in the Douglas Plant.

Wire loom jigs where Belden wire is formed into wiring harnesses in the Douglas Plant.

ANOTHER PLACE
WHERE BELDEN WIRE GOES TO WAR

A pair of "Wings for Victory" by Douglas, the new "Skymaster"—Army C-54 Combat Transport. Combining great size and power, this new Douglas will be an important unit in service with our advancing troops.

Here's another instance in which America's enterprise is maintaining leadership for our armed forces. The performance of the plane bespeaks the thoroughness of the skilled workers who made it—the quality of the products they use. Here is another place where Belden wire goes to war.

Back of Belden aircraft wire is a lifetime of experimenting and testing—collaboration with aircraft engineers since flying was in its infancy. This vast experience makes possible the Belden wire that meets today's needs.

Belden Manufacturing Company, 4625 W. Van Buren St., Chicago, Illinois

Awarded the U. S. Treasury Special Citation of Merit for Initiating the War Bond-or-Cash Dividend Plan

Belden *Aircraft* WIRE

Starter, Lighting, and Instrument Cables √ √ √ SPARK PLUG WIRES

Victory Over Wing Ice Reported

VICTORY over wing ice formations, through use of a new thermal anti-icer, is reported by Tom M. Girdler, chairman of the board, Consolidated Vultee Aircraft Corp..

The anti-icing sytem, developed jointly during the past six years by the National Advisory Committee for Aeronautics and the aircraft company's engineers, employs hot exhause gases to heat the wing and tail leading edges, Girdler said. The gases heat air by means of heat exchangers in the engine exhaust pipes with the heated air being circulated through wings and tail surfaces at a controlled initial temperature ranging as high as 350 degrees F.

The device has functioned perfectly in far northern latitudes. Aluminum alloy leading edges have been kept at a temperature 28 degrees above freezing, even when outside air temperature is 40 degrees below zero, Girdler said.

Lewis A. Rodert, senior engineer for NACA, and Howard F. Schmidt, Consolidated Vultee engineer, conducted experiments with the device at Ames Aeronautical Laboratories of NACA at Moffett Field, Calif.

For several months long range Catalina patrol bombers have been in production with the anti-icer installed. Before winter, the system will be incorporated in Liberator, Coronado and the new P4Y-1, the Navy's anti-submarine flying boat, Girdler predicted.

The circulating hot air system does away with difficulties due to thermal expansion and overheating. According to Harry A. Sutton, director of engineering for the company, other features are:

1. As ice never forms while in flight as long as anti-icer is operating, there is no danger of it caking and acting as a "spoiler", which destroys lift through change of shape of the airfoil and breaks up the flow of air over the surface.

2. As there is no loss of aerodynamic efficiency in either wing or tail surfaces, the anti-icer can be operated during combat, at slow flying speeds and during take-offs and landings.

3. Destruction of accumulated ice and frost begins as soon as the engines are started during sub-freezing weather. Until now it has been necessary to manually clean frost from wing and tail surfaces and controls, a process requiring several hours.

Enters Plane Parts Field

Lodge and Shipley Machine Tool Co., Cincinnati, is entering the aircraft parts production field as a sub-contractor of Aero Products Corp., division of General Motors Corp. for the manufacture of a variety of vital airplane propellor parts. Propellor parts production alone will require employment of up to 15% of the company's present wartime force, with lathe production and conversion operations providing jobs for many others of the plant personnel.

Consolidated Vultee Sets Up Scholarship For Engineer Groups

An initial fund of $50,000 has been set aside for financing scholarships in universities and technical schools for engineering students and graduate engineers by Consolidated Vultee Aircraft Corp, San Diego, Cal.

"Under the plan undergraduate scholarships will be awarded to engineering students who show unusual promise during their first three years of study," the company explained. Fellowships will be established for selected post graduate engineers, enabling them to continue their studies for an additional one or two years while doing research work in the aeronautical sciences.

Employment will be offered to university and technical school faculties during vacation periods, in Consolidated Vultee plants, and exchanges will be arranged between faculty members and company staff engineers as part of this plan.

Aircraft Parts Co. Formed

Aircraft Parts Division is announced as a new subsidiary of the Cleveland Cap Screw Company, Cleveland. Engaged in manufacture of aircraft bolts for two years the 26 year old manufacturers of headed and threaded products will branch out in the manufacture of aircraft fastening equipment under Howard R. Rusk.

HARNESSING THE KICK OF 1000 HORSES

• Here's the drive cog of a tank.

It tugs that tread with a yank that has as much as a thousand horsepower back of it.

And Elastic Stop Nuts—a single one on each lug—hold that tread.

This is just one of the war-fastening jobs Elastic Stop Nuts are doing. There are more of them on America's planes, tanks, guns, naval vessels and production equipment than all other lock nuts combined.

You know why.

It's because of the red elastic collar which makes these nuts lock fast and stay put in the face of vibration—anywhere on the bolt.

This collar molds itself tightly to the bolt. It keeps the nut and bolt threads in pressure contact. The nut can't wiggle or turn.

Later on, these nuts will be available to do this kind of job for industry. Products will be better, stronger, longer-lasting. Production routine will be free of frequent "take-ups," inspections and replacements.

If your postwar planning includes a fastening problem, let us know. Our engineers will gladly suggest a way to solve it and recommend the appropriate Elastic Stop Nut.

ELASTIC STOP NUTS

Lock fast to make things last

ESNA

ELASTIC STOP NUT CORPORATION OF AMERICA
UNION, NEW JERSEY AND LINCOLN, NEBRASKA

Wright Aero Report

Preliminary financial figures covering Wright Aeronautical Corporation's activities for 1942 show a net income, after renegotiation, taxes, and reserves, amounting to $8,904,711, or a percentage of 1.981% to sales. Federal income and excess profits taxes payable for the year amounted to $50,919,264, to be reduced eventually by the postwar refund of $4,922,000, the company announces.

G. W. Vaughan, president of the company, reports that renegotiation of the company's war contracts for 1942 have been concluded with the local renegotiation panel, but have not been fully approved in Washington. The renegotiation proceedings have delayed publication of the company's annual report, he says.

The report shows that Wright shipments for the year ended Dec. 31, 1942 were more than double the previous year, as indicated by the following figures: 1942—$449,545,679; 1941—$208,345,060; 1940—$67,537,213.

Bristol Holds Election

Bristol Aeronautical Corp., New Haven, Conn., board of directors has elected these officers for the coming year: A. L. Patterson, president and general manager; George E. Warren, vice president-engineering; John J. O'Grady, Jr., vice president in charge of labor and public relations, and secretary; A. C. Hurlbut, vice president in charge of manufacturing and works manager, and E. J. Steinecke, treasurer and controller. Besides Patterson, Warren, O'Grady and Hurlbut, new directors are: R. K. T. Steele and N. H. Borgerson.

Lockheed Man Named

S. W. Voorhes, staff assistant to the president of Lockheed Aircraft Corp., has been named by the United States Chamber of Commerce as a member of its special business men's committee on Utilization of War Plants and Surplus Property. Members of the committee include officers of companies engaged in the production of raw materials, the manufacture of war supplies, industrial machinery and transportation equipment, the building and operation of ships, the manufacture and distribution of consumer goods, and banking.

Simonds Praised

In a telegram from the Navy Dept., workers of Simonds Saw & Steel Co. were told of a recent report from a fighter plane division leader which said that "we had several planes where the armor defeated various types of Jap hits. The armor is definitely a lifesaver." The workers were praised for "helping to safeguard precious lives and to maintain the striking power of the naval air arm at maximum strength."

ADMA Elects Directors

The Aviation Distributors and Manufacturers Association announces election of the following directors:

G. B. Van Dusen, Van Dusen Aircraft Supplies, Minneapolis, Minn.; L. G. Mason, Aviation Supply Corp., Hapeville, Ga.; R. V. Trader, Bob Trader Aero Supply, Pittsburgh, Pa.; and A. W. Whitaker, A. W. Whitaker Co., Portland, Ore.

Martin Gives Inventors a Break

AN EMPLOYEES' PATENT remuneration plan, contrary to the tradition that an employee-inventor's wages serve as full payment for his efforts in his company's behalf, has been established by the Glenn L. Martin Co. Under the plan, the employee is given an equitable share in any income derived from his invention through the licensing of outside manufacturing rights.

"The old sad story about the poor inventor who starved in a cellar while the boss waxed rich off the fruit of his labors will never be told about a Martin employee," says a company announcement.

The plan provides that whenever an employee, in the course of his work, hits upon a new idea or develops a new fixture or device, a complete description is sent to the Martin patent department. The department immediately explores the invention to see whether or not it is patentable. If it qualifies, the patent department contacts the inventor and assists him in preparing the proper write-ups, filling out the correct forms, and assembling working models and other materials needed in order to apply for a patent. If the inventor's own models and plans are not sufficient, models and plans that will serve the purpose are prepared by the company's tool design, tool making, and engineering departments. After the material has been correctly prepared, a patent is applied for in the employee's name and assigned to the Martin company.

This, however, does not mean that the employee has forfeited his interest in the invention. Under the remuneration plan a separate agreement is entered into between the employee and the company long before the patent is applied for. This agreement provides that while the company will bear all the expense of patenting the invention, and, where the opportunity arises, licensing it to outside concerns for manufacture, the employee-inventor will receive a share of the proceeds from such licensing, starting at 10% until the inventor has received $5,000 and according to a sliding scale thereafter.

West Coast Plants Hope to Keep Many School Boys on Job

West Coast aircraft factories are making every effort to hold a majority of the 16-18 age group after the school year begins through increasing utilization of the Four-Four plan and continuation schools, a survey by *American Aviation* shows.

Lockheed and Vega, originators of the first organized program to use boy power under a system of four hours at the factory and four hours at school, or four weeks at school and four weeks at the factory, expects to lose very few of its 3,000 youths.

This group, however, has been working full time during summer vacation and upon return to the Four-Four plan, their jobs will condense to 1,500. To overcome this, the companies are seeking to hire an additional 3,000 students.

The policy of Lockheed-Vega has been to hire children through the schools. At present more than 40 schools are represented, covering Pasadena, Burbank, Glendale, Los Angeles and San Fernando valley towns.

North American Aviation has announced opening of a continuation school adjacent to the company's Inglewood plant. The school, which will accommodate 300 students, is directed by the Los Angeles City School District with facilities furnished by the factory.

650 Will Quit

A survey among the 1,500 minors employed at the Douglas Aircraft plant in Santa Monica shows that roughly 650 will not continue working after the start of school. The majority of those remaining stated their intentions of working on the four-hour shift.

Company officials estimated that the same ratio would hold true at El Segundo and Long Beach plants upon completion of a current survey.

Of the 132 employed at Northrop, 64 are leaving. Students there will have choice of 4 to 8 p.m. and 8 to 12 p.m. shifts.

The Vultee Field division of Consolidated-Vultee employed 400 minors during the summer season and will lose most of this number as the factory does not contemplate a split-shift program.

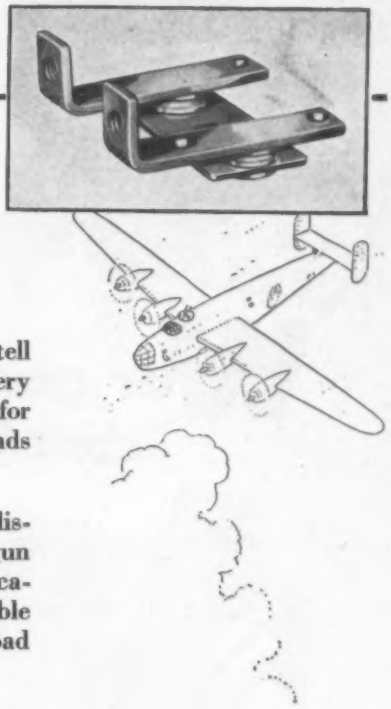
A recent WMC survey of the area showed that 51,000 work permits have been issued in the Los Angeles city school district during the last year for boy and girl workers between 14 and 18 years of age.

Of this number, 30,000 were issued during the school year, and 15,000 since summer vacation began.

Although many of the permits were for other war industries, a breakdown shows number employed in areas which center around aircraft production: Santa Monica, 15,000; Burbank, 2,500; El Segundo, 900; Long Beach, 1,400; Downey, 318; Inglewood, 500.

These 16-year-old Pasadena, Cal., school boys are helping to solve Lockheed's manpower problems. The company has pronounced the work of Lawrence Bennett (left) and Gilbert Anderson "very satisfactory."

Every Part is Most Important at the Time It Does Its Job



What part of a plane is most important? Let the pilots tell you that. All we know that it is "most important" that every phase of the contact parts we produce is perfect and right for the job they do. The time may come when everything depends on the accurate functioning of those tiny contacts.

Contact materials are all important as one manufacturer discovered. He was making an amplidyne relay for airplane gun turret controls. The relay had to conform to rigid specifications and carry approximately 100 amperes of current. Trouble developed from the contact material specified. Under overload tests, the contacts stuck.

The manufacturer was pressed desperately for time. He consulted Mallory engineers. Their experience and "know how" cooperated to find a swift answer. An exceptional Mallory Elkonite fitted the need. A Mallory contact assembly was developed. Not only did the result eliminate the sticking, but obtained, in actual operation, a low millivolt drop. Further, a backing of Mallory 3 metal was recommended with the result that the complete assembly functioned beyond expectations.

While the design is still in blueprint form

CONSULT MALLORY
for Contacts and Contact Assemblies

Mallory engineering service is most important in cooperating with design of devices employing contacts because it represents years of progressive pioneering in solving numberless contact and complete contact assembly problems. It stands ready to help, if you are planning the production of almost any automatic or semi-automatic device.

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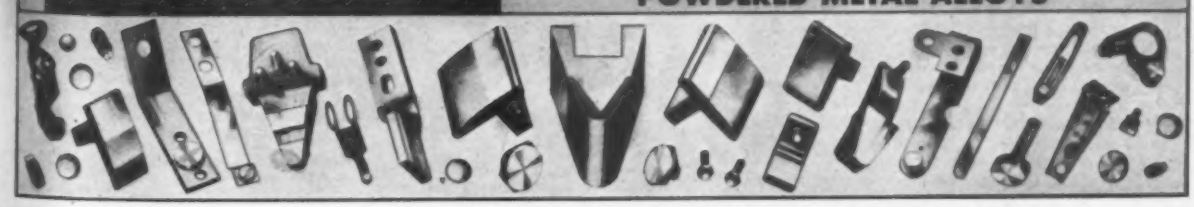
ELECTRICAL CONTACTS AND CONTACT ASSEMBLIES . . . NON FERROUS ALLOYS POWDERED METAL ALLOYS



Financial

GRUMMAN AIRCRAFT ENGINEERING CORP., Bethpage, N. Y., authorized a dividend of $1 a share for payment to common stockholders July 29. This represents an increase of 25 cents over payments made in August and December last year.

JACOBS AIRCRAFT ENGINE CO., Pottstown, Pa., reports for the four months ended April 30, subject to renegotiation of war contracts, a net profit of $1,519,465 after charges and provision of $4,556,500 for state and federal income taxes and excess profits taxes after deducing $484.500 post-war federal tax credit. The net is equal to $2.45 a share on 618,546 shares of capital stock outstanding.

UNITED STATES PLYWOOD CORP., New York, has filed with the Securities and Exchange Commission an amendment setting the interest rate and naming the underwriters who will participate in the proposed issuance and sale of 15,000 shares of cumulative preferred and 50,000 shares of common stock. The interest rate of the preferred stock, Series A, $100 par value, was set at 4¾ per cent. The common stock to be issued has a par value of $1 a share. The following underwriters were naced:

Eastman, Dillon & Co., Hemphill, Noyes & Co., Hornblower & Weeks, Lehman Brothers, Merrill Lynch, Pierce, Fenner & Beane, Riter & Co., E. H. Rollins & Sons, Inc., Shields & Co. and Union Securities Corp., all of New York City, and Kebbon, McCormick & Co., Chicago; Otis & Co., Cleveland; Piper, Jaffray & Hopwood, Minneapolis; and Dean Witter & Co., San Francisco.

The company reports for the year ended April 30 a net profit of $814,406, subject to renegotiation, after federal normal income tax and surtax. This is equal to $3.15 a common share.

NORTHROP AIRCRAFT, Inc., estimates that company's net profit was $1,600,000, including taxes but not renegotiation, for fiscal year ending July 31. This is equal to $4 a share and compares with net profit in 1942 of $3,044,741, equal to $7.93 a share. Gross sales during 1943 were approximately $69,000,000, more than double $32,983,762 sales in 1942. Working capital of the company has improved with assets now greater than liabilities.

HAWAIIAN AIRLINES, Ltd. reports net income for 1942 of $226.153 after $394.043 income and excess profits taxes.

NORTHEAST AIRLINES, Inc., reports net income for 1942 of $43.393, equal to 14 cents each on 300,000 common shares. For year ended June 30, 1942, company reported net income of 6 cents a common share.

CONTINENTAL MOTORS CORP. reports net profit for the six months period ending April 30, 1943 of $2,992.356.10, after all charges including depreciation, Federal income tax, excess profits tax, and after allowing for proper reserves and charge-offs.

MINNEAPOLIS-HONEYWELL REGULATOR CO. reports for the six months ended June 30, 1943, net profit of $1,425,789, after taxes and renegotiation of government contracts and including estimated postwar refund of $386,761. Net is equal to $1.49 a share on the 621,980 shares of common stock before the postwar refund, and $2.11 a share after adding such refund. This compares with a net profit of $1,105,958 or $1.62 a common share for the first half of 1942.

DOUGLAS AIRCRAFT CO. reveals that its combat and cargo planes are being delivered at the rate of $100,000,000 a month and that gross sales for the fiscal year ending next Nov. 30 should be more than $1,000,000,000. This compares with gross sales during the previous fiscal year of $501,000,000. Less than one-third of 1% is expected to be returned to stockholders, however, as most of the earnings are being turned over to the government in the form of taxes, the company reports.

PLOMB TOOL CO., Los Angeles, Cal., directors have declared dividend of 15c a share on the $10 par preferred, and interim dividend of 30c a share on the common, both payable July 15 to stock of record June 26.

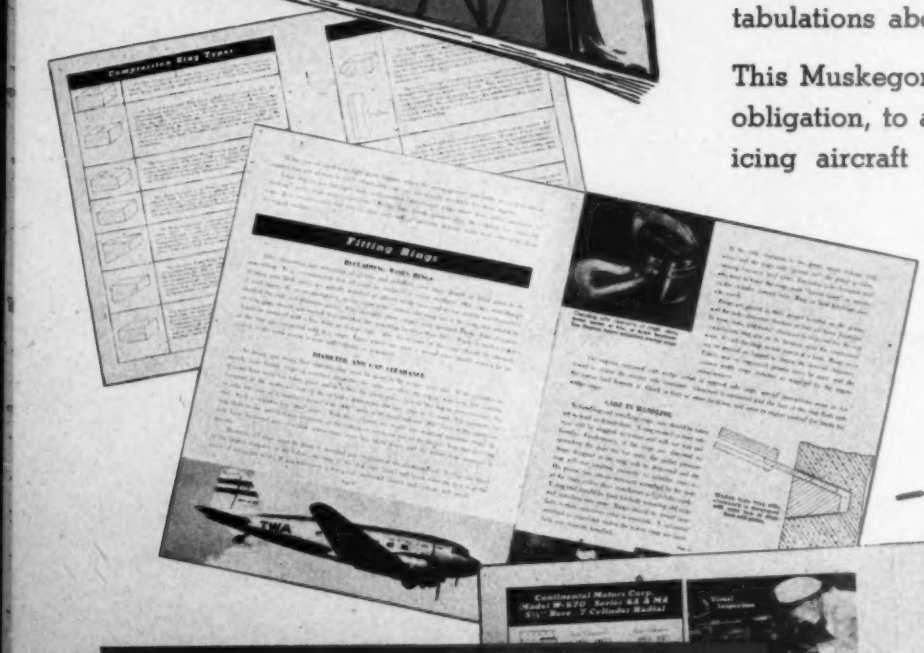
"...fills a long existing gap in the aircraft engine industry."

Quoted from the letter of a leading aircra engine manufacturer, the statement abo is typical of the reaction in the industry our new Aircraft Piston Ring Manual.

Illustrated here are several specimen page as examples of the interesting presentatio of authentic data. Pictures, charts an tabulations abound.

This Muskegon manual is available, witho obligation, to all who are interested in ser icing aircraft engines. In requesting you copy please state you position or activity whic prompts your interest.

MUSKEGON PISTON RING C
Muskegon, Michigan
PLANTS AT MUSKEGON AND SPART



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Willys-Overland Record

Willys-Overland Motors, Toledo, O., reports that in less than two years, monthly production of aluminum aircraft forgings has climbed from the zero mark to more than 1,000,000 forgings, making the company the second largest producer of this type of material in the nation. The Willys-Overland aluminum department produces 700 different types of forgings.

Leading Aviation Stocks

New York Stock Exchange

	Week Ending August 28				Week Ending Sept. 4			
	Sales	High	Low	Net Change	Sales	High	Low	Net Change
American Airlines	1,900	67½	64	+2	1,100	69	67½	+1
Aviation Corp	21,700	4¼	4		9,600	4¼	4	
Bell Aircraft	2,500	14	13	+ ⅝	1,700	14	13½	— ⅛
Bendix Aviation	3,600	35½	34	— ½	2,900	35½	34⅝	+ ⅛
Boeing Airplane	5,000	15⅝	15	+ ¾	2,700	15⅝	15⅛	— ⅛
Consolidated Vultee	8,300	14⅝	13½	+ ⅞	4,500	14⅝	14	— ⅛
Consolidated Vultee pfd	1,400	23½	22¼	+1⅛	1,600	23	22¼	— ⅛
Curtiss Wright	22,600	7⅜	7	+ ⅜	16,500	7⅝	7¼	+ ⅛
Curtiss Wright A	3,000	19⅛	18⅝	+ ⅛	1,800	19¼	18¾	
Douglas Aircraft	3,200	61	57½	+2¼	3,900	61¼	59⅛	+ ⅛
Eastern Air Lines	1,400	37½	36	+ ⅞	1,500	39	37¼	+1⅛
Ex-Cell-O	1,800	25⅝	24	+1⅜	1,300	25¾	24¼	— ⅛
Grumman Aircraft Eng.	2,100	13⅜	12⅛	+ ⅞	2,400	13¾	13⅜	+ ⅛
Hayes Industries	2,100	7⅜	7	— ⅜	2,100	7¼	6⅞	+ ⅛
Lockheed Aircraft	9,800	17⅝	16⅜	+ ¾	7,700	18	17⅜	+ ⅛
National Aviation	600	11⅞	11⅜		900	12	11⅝	
North American Aviation	5,300	10⅜	9⅞		5,400	10⅜	9⅞	
Pan American Airways	10,200	36¼	34¼	+ ⅞	8,900	36¾	34⅞	+1
Penn Central Airlines	3,100	16⅝	15¾	+ ⅛	5,000	17⅛	16⅝	+1⅛
Sperry Corp.	5,200	27⅝	25¼	+ ¾	4,000	27¼	26¼	— ⅛
Thompson Products	700	30	29¼	— ⅛	600	30	29½	— ⅛
Trans. & Western Air	2,900	21¼	19¾	+ ½	2,400	22⅜	21¼	+ ⅛
United Air Lines	6,300	28⅜	26¾	+ ½	4,100	29¼	27⅝	+ ⅛
United Aircraft	5,400	32	30½	+ ⅞	6,700	33	31¼	+1⅛
United Aircraft pfd	600	107½	107¼	— ¼	1,300	108½	107⅝	+1⅛
Wright Aero	5,000	88	88		8,000	91	88	+3

New York Curb Exchange

	Week Ending August 28				Week Ending Sept. 4			
	Sales	High	Low	Net Change	Sales	High	Low	Net Change
Aero Supply B	1,100	4⅛	4	+ ⅛	100	4⅛	4⅛	
Air Associates					500	7½	7	+ ⅛
Aircraft Accessories	8,000	3¾	3⅛	— ¼	4,700	3⅝	3⅛	+ ⅛
Aro Equipment	900	10⅛	9⅝		1,100	9⅞	9¼	— ⅛
Bellanca Aircraft	300	3	2¾		400	2⅞	2¾	
Breeze Corporations	500	11	10½	+ ¼	1,400	11	10⅜	
Brewster Aero	1,100	3⅞	3¾		4,200	3¾	3½	— ⅛
Cessna Aircraft	4,800	9	8⅝	— ⅛	1,700	7¾	7½	— ⅛
Colonial Airlines	4,700	9	7¾	+1	4,700	10	9	+ ⅛
Fairchild Aviation	2,000	8¼	7⅞	— ⅛	1,000	8⅛	7¾	— ⅛
Fairchild Eng. & Airplane	2,200	2¼	2		1,200	2⅛	2	
Irvin Air Chute	400	8⅞	8¾	+ ⅛	200	9¼	9	+ ⅛
Republic Aviation	2,100	3⅝	3¼	+ ¼	1,400	3½	3⅜	
Ryan Aero	200	3⅝	3⅝	— ¼				
Solar Aircraft	800	3⅞	3⅝		100	3⅝	3⅝	
United Aircraft pfd	1,000	10⅜	9¾		1,700	10	8¾	— ⅛
Western Air Lines	1,700	9⅝	9	+ ⅛	1,200	9¾	9¼	+ ⅛

AIRPLANE MANUFACTURING & SUPPLY Corp. and two divisions, Pacific Airmotive, Lockheed Air Terminal, Burbank, Cal. and Airplane Parts & Supplies, 6235 San Fernando Road, Glendale, Cal. has moved executive, sales, purchasing, and accounting offices to 409 North Brand Boulevard, Glendale, Cal.

New Fiberglas Plant

Owens-Corning Fiberglas Corp., will open a new plant soon at Huntingdon, Pa., the company announces. Glass fiber textiles, used in plane construction and for the insulation of air-borne electrical equipment, will be produced entirely for war purposes, the announcement states.

FLAK-ACK-ACK—"SLEEP! LET ME SLEEP!"

WAR FLYING plays on a man's nerves like a pick on a mandolin. He's got to stay keyed up. Watch those instruments. Watch for the target. Watch for the enemy. Strain. Look now! Keep looking . . .

Quiet at last, back at the airdrome. Quiet in bed, no motors pounding, no flak, no ack-ack. Too quiet. Why can't a fellow sleep? Oh, for some sleep. "Grant me the mercy . . ."

It was at the "University of Petroleum," Shell's research laboratories, that scientists first found how to get allyl alcohol, ingredient of one of the most effective and least harmful of sedatives, from "waste" petroleum gases. Flight surgeons now are administering such sedatives to fagged-out flyers—to bring the healing restorative, sleep.

From the genius of Shell Laboratories also came the first 100-octane fuel in commercial quantities . . . one of the reasons the majority of the country's leading plane and engine makers prefer Shell Aviation Fuels. Shell Aviation Products are also preferred by many airlines, aviation training schools, and airports.

Farsighted airport operators will find Shell's wartime popularity a profitable peacetime asset.

First oil refinery to win Army-Navy "E"—
Shell's Wood River Refinery

AVIATION FUELS — SHELL — AEROSHELL OILS

Advertisers In this Issue

Aviation Securities Over the Counter

	Week Ending August 20 Bid	Week Ending August 20 Offer	Week Ending August 27 Bid	Week Ending August 27 Offer
AIRLINES				
All American Aviation	3½	4¼	3	
American Airlines, Pfd.	117	119	117	120
American Export Airlines	31	32¼	34	36
Braniff Airways	11½	12 Exd.	13	14
Chicago & Southern Airlines	14⅛	14⅜	14¾	15
Continental Airlines	8½	8¾	8⅛	9
Delta Airlines	20	23	22	24
Inland Airlines	3½	4	3½	4
Mid-Continent	5⅞	6	6	6½
National Airlines	16¼	16½	17¾	18
Northeast Airlines	7½	7¾	7⅜	8
Pennsylvania Central Airlines, Pfd.	32¼	32¾	32½	33
MANUFACTURERS				
Aeronca	3⅜	3⅝	3¼	3½
Aircraft & Diesel	1⅝	1⅞	1⅜	1½
Aircraft Accessories	3⅜	3⅝	3	3½
Columbia Aircraft	¾	1	⅝	¾
Continental Aviation	3¾	4⅛	3⅝	4
General Aviation Equip.		2½		2⅝
Harlow Aircraft	.20	.45	.30	.45
Jacobs Aircraft	4⅜	4⅝		4½
Kellett Aircraft	2⅜	2⅝	2½	2⅝
Kinner Motors	.95	1.10	.90	1.20
Liberty Aircraft	9⅝	10	10⅛	10½
Northrop Aircraft	6	6¼	6⅛	6½
Piper Aircraft	5¼	5⅝	5⅜	5½
Pittsburg Aviation Industries			5	
Rohr Aircraft	5½	5⅞	5⅝	6
Taylorcraft	4¼	4¾	4¼	5
Timm Aircraft	.75	.85	.75	.85
United Aircraft Products	17½	18½	17¼	18

Aviation Stock Averages

	Week of August 13	Week of August 20	Week of August 27
DOW-JONES INDUSTRIAL AVERAGE	137.39	136.93	135.83
DOW-JONES RAILROADS	34.46	34.44	34.11
5 MAJOR AIRCRAFT MANUFACTURING CO.	29.25	28.07	28.75
4 MAJOR TRANSPORT COMPANIES	39.00	38.28	37.84
7 LESSER AIR LINE COMPANIES	13.91	14.19	14.36
4 LESSER MANUFACTURING CO.	9.62	9.22	9.75
20 AVIATION COMPANIES	21.90	21.49	21.94